



CITY OF MANCHESTER.

BIENNIAL REPORT

PRESENTED TO THE

HEALTH COMMITTEE

BY THE

OFFICER OF HEALTH.

JULY, 1878.

MANCHESTER:

CHAS. SEVER, PRINTER, LITHOGRAPHER, &c., LONG MILLGATE.
1878.

BIENNIAL REPORT OF HEALTH COMMITTEE.

The Health Committee submit, for the information of the Council, the Biennial Report of the Officer of Health in relation to the business of the department.

On behalf of the Committee,

Town Hall,

22nd July, 1878.

(Signed) THOS. SCHOFIELD,

Chairman.

[COPY.]

REPORT OF THE OFFICER OF HEALTH.

To the Chairman and Members of the Health Committee.

Gentlemen,—So long a time has elapsed since the census of 1871, that the numbers then obtained serve only as bases for the calculation of the population of the city of Manchester at the present time. From the revised returns of the population of the township of Manchester furnished by the late Mr. Ner Gardiner, the Superintendent Registrar of Manchester, to the Guardians of the Poor, it appears that according to the census there were in 1871 within the township 174,265 persons inhabiting 32,431 houses, or 5·37 persons to each house. This number became reduced in the office of the Registrar-General to 5·33.

In the township of Cheetham there were 21,962 persons residing in 3,719 houses, or 5·9 persons to each house. Mr. Edgill's return gave for the townships within the city included in the Chorlton Union, viz., Hulme, Chorlton-upon-Medlock, and Ardwick, 153,031 persons living in 30,425 houses, or 5·02 persons to each house.

By a very careful examination of the Overseers' or Assessors' books of the respective townships within the city of Manchester for the year 1877, in which the houses occupied as dwelling houses were alone enumerated, all empty houses or other buildings not inhabited as dwellings being excluded, it was found that there were for that year in the—

Township of Manchester	32,168	inhabited houses.
“ Cheetham.....	4,480	“
“ Beswick	1,359	“
Townships of Hulme, Chorlton-upon-Medlock, and Ardwick	32,563	“
Total	70,570	“

Applying to the number of houses in the township of Manchester the multiplier derived from Mr. Gardiner's return (5·37), it will give as the population of the township 172,742 persons, whilst that adopted by the Registrar-General (5·33) will give 171,455 persons.

The houses in Cheetham township multiplied by 5·9 will give 26,432 inhabitants; whilst those in Hulme, Chorlton-upon-Medlock, and Ardwick, multiplied also by the average number for each house (5·02) obtained in 1871, will give 163,464.

For the township of Beswick I assume the low average of the last three townships, which will give 6,822 persons.

So that the population of the city of Manchester in 1877 should stand thus:—

Township of Manchester	171,455
“ Cheetham	26,432
“ Beswick	6,822
Townships of Hulme, Chorlton-upon-Medlock, and Ardwick	163,464
Total population of the city in 1877 ...	<u>368,173</u>

The total number of deaths within the homes of the people in the city of Manchester, including Beswick, during the year 1877, was 8,081, which, in a population of 368,173, is equal to a death-rate of 21·9 per 1,000; but 969 deaths took place in public hospitals within the city; and 95 in Monsall Hospital (from infectious diseases) of persons removed to that hospital from the city; whilst 120 inquests were held on the bodies of persons found drowned, &c., who could not be found from the Registrar's entries to have had any residence in the city. These added to the preceding number will raise the death-rate to 25·16.

The population of the city determined from the number of houses, exclusive of the township of Beswick, is 361,351; the Registrar-General's estimate, based on the rate of increase during the decenniad preceding the last census, is 355,608; the difference, 5,743, is too small materially to affect the death-rate.

In the several districts, excluding the 120 special Coroner's cases (from drowning and accidents) and deaths occurring in hospitals, the rate of mortality will be for—

Ancoats	22·3
London-road	24·5
Deansgate	26·3
Market-street.....	22·8
St. George's	23·3
Cheetham	16·6
Beswick	19·9
Ardwick	19·6
Hulme	23·0
Chorlton-upon-Medlock	20·2

In the intervals of the census I know of no means by which the population of these districts can be estimated with any approach to accuracy except that by which I have endeavoured, in each case, to arrive at its amount during the past year; and until the conclusion of the

present decenniad, now considerably past its middle period, it may be necessary occasionally to resort to this. In 1881 the more accurate numbers of the census will again for a time give us safe bases for calculation.

The deaths occurring in public hospitals are somewhat difficult to distribute, and I therefore prefer to give them in one sum, adding the amount to the total local deaths for purposes of calculation.

The Coroner's cases include many deaths of persons (as of those found drowned) who have not been residents of the city, and therefore cannot be referred to districts therein.

In a map which accompanies a report to the Health Committee "on the application of the Artizans and Labourers' Dwellings Act to Manchester," and which is issued with this report, I have divided the city into three zones; the inner one, surrounding the Exchange, covers an area of more than six hundred acres, representing commercial Manchester so occupied by commercial property that the dwelling-houses, though crowded in some small localities, yet on the average of the whole tract do not number more than nine houses to the acre;—the middle zone, immediately surrounding this, defines the space occupied by houses still inhabited as dwellings, but erected before 1831, and amidst which commercial buildings are largely interspersed and are extending with considerable rapidity;—the outer zone represents the newer part of Manchester, the houses have been almost entirely erected since 1831, and are inhabited by an industrial population, almost entirely engaged in the production and in the sale of the various manufactures which form the business of the city.

The rate of mortality of the last year (1877) is, perhaps, the lowest that has ever been known in Manchester. It has been gradually reached since the formation of the Health Department, and the reduction commenced with the inauguration of that department. The Act for the Registration of Births, Deaths, and Marriages, under which, for the first time, true estimates of the numbers of births and of deaths were obtained, came into operation in 1838, and the average death-rate in Manchester for the whole number of years from 1838 to 1868, both inclusive, was 32·72.

There are occasional years (about seven in all) which exhibit a comparatively low rate of mortality (a little under 30 per 1,000), but these generally follow immediately years in which occurred some grave epidemic, as cholera, influenza, &c., by which a large number of weak lives had been swept away; as, for example, the years 1850-51 with death-rates of 29·6 and 29·4, following the cholera year 1849, in which the death-rate was 37·1.

An attempt was made towards the latter end of the last century to obtain information of the population and death-rate of Manchester by some of the very able men then residing in the town. A careful enumeration of the houses and of the inhabitants was made in 1773,

and it was ascertained that the town contained in that year a population of 23,942 persons, with a density equal to $6\frac{1}{4}$ persons to each house.

The average mortality of the three years, 1785-6-7, was estimated by Mr. Thomas Henry, F.R.S., at 32·9 per 1,000. It is probable, therefore, that the general rate of mortality from the middle of the last century to 1868 has been nearly 33 per 1,000.

The average rate of mortality of the first five years after the formation of the Health Department was 28·74, and of the next four years (1874 to 1877) 27·4; that of the last year (1877) as already stated, 25·16; and it is satisfactory to find that the diminution still continues, as there are 120 fewer deaths in the current half-year of 1878 than in the corresponding six months of last year.

In 1876 the city suffered from a severe visitation of smallpox, which added 0·81 to the death-rate for that year, and continuing, in a lessened degree, through 1877, increased the death-rate of the latter year by 0·33. But for this invasion of smallpox, which is always accidental, and has nothing to do with the ordinary death-rate of the city and its normal causes, the latter would have been only 24·83.

The total number of deaths from smallpox, including those which occurred in Monsall Hospital, was 298 in 1876 and 123 in 1877, and of these deaths 146 took place in the hospital in 1876 and 79 in 1877, leaving only 44 for the home-deaths from smallpox in the latter year. The total number of cases of smallpox sent to the hospital at Monsall in 1876 and 1877 by the Health department of the Corporation was 1,116, and to the activity displayed in getting information of cases by the official staff, and the promptness exercised in their removal, with the full and efficient disinfection of the houses from which they had been removed, and of all articles of apparel and furniture, may be fairly attributed the limitation of the disease and its somewhat speedy suppression; for the attack commenced with great virulence, and the cases generally were attended with severe symptoms throughout its course. To the energetic activity of the medical officers of the respective Boards of Guardians much credit is due for the zeal with which they have secured the vaccination of young children, and thus largely protected these helpless members of the community from the attacks of a loathsome disease.

To the readiness of Dr. Reed, of the Royal Infirmary, to afford every facility for the reception of the cases at Monsall Hospital, I am glad to bear testimony.

The deaths from fever (typhus and typhoid), including those which occurred in Monsall Hospital, amounted to 231 in 1876, and to 164 in 1877, equivalent respectively to a death rate of 0·65 and 0·46. In 1876 there was a slight epidemic of fever of somewhat malignant character. Some cases exhibited the phenomena of true typhus, according to the reports of the medical attendants. The early cases were traced to districts

outside the city, and I believe the disease to have been entirely imported. They were so widely scattered throughout the city that they could scarcely have been due to any local circumstances, and the same reason would be fatal to any milk hypothesis. By prompt isolation of the cases and careful disinfection the spread of the disease was quickly checked, and the number of deaths from fever in 1877 was smaller than I have ever known to have occurred in any year in Manchester.

The township of Beswick affords an example of a town almost entirely inhabited by working men and their families, and the houses have been erected for the most part since 1871. The streets are formed and the houses built in accordance with the building regulations of the Corporation of the city. The streets are wide, well paved, flagged, and drained, straight, and running at right angles to each other at moderately short intervals. The houses are of two stories, "through houses," with yards of 70 square feet area, and separate closets to each; there is a space of 24 feet between the backs of the rows, and the passages are 5 feet in width. The houses are built to pay, of course, and very few of them are cellared or have any ventilating space underneath the ground floor, which is flagged; the walls are thin and porous, and therefore it is probable that many of them are damp. If the houses were built of good materials and with ventilating space underneath, there is nothing in their general character and construction inimical to health. The male inhabitants are chiefly factory operatives, colliers, mechanics, and persons engaged in chemical manufactures, with a few shopkeepers intermixed to supply their wants. There are artisans engaged in other occupations also, but the classes above mentioned seem to constitute a large portion of the population. As stated above, the rate of mortality is 19·9, or in round numbers 20 per 1,000, exclusive of any deaths in hospitals of persons that may have been removed from Beswick. At the first aspect it seems satisfactory that a population so exclusively of the artisan class should have so low a death-rate, and it is probable that the normal death-rate is not higher than this, but so considerable have been the annual changes in the township that I have preferred to take the last year only, the population during which has been carefully estimated for discussion. The satisfaction is somewhat diminished when we find that in another portion of the city, though certainly of very limited area, there are some streets of houses occupied by a class only just above the inhabitants of Beswick, and built within the same period, in which the mortality is only 12·5 per 1,000. It is true that the houses are somewhat larger, are cellared underneath, and the rooms are of greater capacity, the latter a great consideration, but the cubic capacity of rooms unfortunately must always bear a relation to the means of the occupants. People of small incomes, whether living in two-storied houses or in portions of "flats," must be content to live in small rooms. It is, I think, to be regretted that small houses should have the capacity of the living-rooms

unnecessarily diminished by the introduction of lobbies, which have the effect not only of reducing the front rooms to a very meagre size, but of preventing almost entirely its ventilation. Such rooms in small houses are usually very close and stuffy. It seems praiseworthy that poor people should desire to have one pleasure-room in which to store their best and choicest things and to enjoy on Sundays and holidays, but it leads to the back room being solely occupied during the greater portion of the week, and to deficient ventilation of the house. It is not solely, however, to the somewhat larger size and possibly better construction of the houses, which have hitherto afforded so small a mortality, that the large difference in the death-rate is due. The occupants of the latter are in receipt of good wages, temperate in their habits, spending their incomes on their families, providing them with warm clothing and good food, whilst the mothers spend their days at home nursing and attending to their children. The large infant mortality in Beswick points to the out-door employment of the maternal parents, and it is probably to a difference in social circumstances and conditions that the disparity in the mortality is due, rather than to any inequality in the size and construction of the houses. Without referring specially to Beswick, but speaking generally, there can be no doubt that the out-door occupation of mothers increases largely infant mortality, whilst indulgence in intemperance, the common vice of the city, raises the death-rate at all ages.

We have seen that a new town, built on improved principles of construction and inhabited entirely by an industrial population, had a death-rate of 20 per 1,000, a low rate compared with that of the city a few years ago, and a lower rate than it was thought within a recent period in our history a purely industrial population could be brought to with the unfavourable surroundings of such a locality as Beswick.

Ardwick, a neighbouring township with a large addition of new houses, has also a considerable population dwelling in houses of much older date, and presenting, many of them, a very unfavourable appearance; and the rate of mortality, exclusive of any deaths in hospitals, is 19·6, a little below that of Beswick. Coming nearer to the interior of the city we find Ancoats, which joins up to Beswick, and which, except in the neighbourhood of Holt Town and Newton, is composed entirely of houses now amongst the oldest in the city, and entirely occupied by an industrial population, with a death-rate, exclusive of hospital cases, of 22·3.

The small range afforded by these numbers is striking when it is remembered that they represent with a similar population the extremes of date in the antiquity of the dwellings. One is the newest and another the oldest district occupied by a purely industrial population. I have, however, treated this subject from other points of view in a Report recently presented.

The table exhibiting the comparatively low rates of house mortality in all the districts except Deansgate is sufficient proof that the reduction is

due to a general cause, and not to local destruction of property, which can affect favourably only those districts of the city in which they take place.

Referring to the map which accompanies this report, and of which I have given a brief description, it will be found that the differences in the death-rates of the middle and outer zones are much less than might have been expected.

It is interesting to speculate as to the extent to which the mortality of such a town as Manchester may be reduced. Exclusive of hospital deaths, a very large proportion of which are in persons not legitimately citizens of Manchester at all, but tramps, recent Irish immigrants, and, as regards one hospital, persons coming from a distance, anxious to avail themselves of the well-known skill always to be found therein, and a few coroners' cases of persons found drowned, &c., and not known to be citizens of Manchester;—we have seen that the death-rate last year of the whole city was 21·9, this number applying to deaths in dwelling-houses only, or in any buildings not hospitals. During the first six months of the present year the deaths have been fewer by 120 than in the corresponding period of last year, and there is a probability that in the absence of any epidemic the reduction may go on for a considerable time.

My friend, Dr. Hill, the Medical Officer of Health for Birmingham, is of opinion that in the large manufacturing towns the rate of 18 per 1,000 may be reached. I believe that this will be achieved at no distant period, but it will be by the general course of sanitary improvement, for, unfortunately, the experience hitherto derived from model lodging or dwelling-houses is far from satisfactory.

These results are to be accomplished, however, not by a wave of the hand, or the utterance of a shibboleth, but by the removal of the exciting causes of disease, and the prevention of its extension when liable to be propagated by infection. The latter has been very fairly accomplished in Manchester by isolation of the cases, and destruction by disinfecting processes of the exciting contagium, until fever is scarcely known amongst us compared with its former prevalence, and smallpox has found but a temporary home amongst us. For cases of scarlet fever I have always been in favour of small local hospitals, though I am bound to bear testimony to the zealous readiness of all connected with the fine hospital for children at Pendlebury to receive and convey to the institution all cases that may have been presented. Of the kindness, gentleness, care, and skill which the little sufferers receive within its walls it is impossible to speak too highly.

I have recently learned that, in connection with the Day Nurseries for Orphan Children, it is intended to establish a small hospital for cases of whooping cough. The difficulty in dealing with such cases by means of internal hospital treatment has hitherto been in their long duration, but the very fatal nature and great communicability of the disease makes any

attempt to deal with it by isolation and treatment worthy of all necessary support. The deaths in the city from whooping cough in 1876 were 267; and in 1877, probably owing to the coldness of the year, not less than 332.

The alterations or reconstructions of the old ashpits and closets up to this time amount to about 40,000. The total number of the old closets greatly exceeded the estimate originally given to the department, and it will require probably a year and a half to complete the alterations, after which not a single ashpit or cesspool will drain into the sewers or into the rivers, and there will not be a single pound of putrefying matter in the city within the knowledge of the Health department. All such matters of every kind will be received at the Committee's yards, and will at once be deodorized and utilized. All deposits of putrefiable material will be removed by the appliances or carriages of the Health Committee, or will be received at the yards from private hands.

The closets as a rule are emptied every three or four days, and when necessary still oftener. They are emptied before sufficient time has elapsed for putrefactive decomposition to be set up. Daily removal I believe to be quite unnecessary. If the removal be effected only once in four days, even then a fourth only of the deposit will have been lying during the term. No gases, the results of putrefaction, are given off within so brief a period.

The matters received at the Health Committee's yard are dealt with according to their nature. The contents of the old privies or middens, and a portion of the excretal contents of the pails used in the new closets, are sent out of the city as nightsoil, chiefly by boat, as soon as received. Another portion of the pail contents is converted into "concentrated" manure; the ammonia of the excreta is fixed by sulphate of lime or by sulphuric acid, and the volume of the urine is reduced by evaporation, either to the consistence of treacle or to a dry powder. The latter is effected by steam heat, so that there is very little loss of ammonia in the process, and as the evaporated water is all condensed there is no nuisance attending the operation. All the constituents of the urine are preserved; the ammonia salts, the potash salts, and the soluble and insoluble phosphates. The solid excreta, together with all other animal matters delivered at the yard, including slaughter-house refuse, dead animals and fish unfit for food, are also worked up with fine ashes into a pulp, and the conjoined materials form a manure of such excellent quality that no difficulty is now experienced in the sale of it; whilst, as it contains in concentrated form all the elements of a first-class manure, it is applicable to all kinds of crops. The production of this manure has been of gradual growth. At first the quantity of excretal matter received at the yard was so small in proportion to the ashes delivered that the latter was more than sufficient to absorb and bring into a usable state the excreta.

Gradually, as the closet reconstruction went on, the latter increased in proportion, and at length was so much in excess of the absorbent matter that the volume had to be reduced by evaporation. This was at first effected in pans by under and oven heat; then an apparatus was used by which the urine was spread over a large surface by means of a volute enclosed in a revolving cylinder, and traversed by a current of hot air; afterwards, as a cheaper apparatus, a high tower was used through which the urine fell in showers, the evaporation being effected by an ascending current of hot air; and, finally, a jacketted cylinder or boiler has been used, in which works a spindle with hollow arms. The jacket of the cylinder or boiler, the spindle and arms, are supplied with steam, and the apparatus so far has given satisfactory results.

At the present time as much concentrated manure is manufactured at the yard as the space at command and the works will allow of. In a few months, when the constructions at the Holt Town yard shall be completed, the whole of the excreta of the city derived from the new closets will be converted into this manure, and in eighteen months or two years the entire excretal matter of the city will, as soon as delivered at the yard, be deodorized and manufactured into this valuable product, and the nightsoil will cease to be an opprobrium of the city. It may now be said, indeed, that all difficulties connected with the manure manufacture have been successfully surmounted.

The manufacture of mortar—the material into which all the broken earthenware and glass, bass, slag, clinkers, &c. received at the yard are converted—has never been attended with any difficulty, and is in continuous operation. No tainted matters are allowed to enter into it, as everything not absolutely dry when received is passed through a blast furnace previous to incorporation with it.

Into these two manufactured articles, manure and mortar, will all the refuse of the city with which the Health Committee can deal be shortly converted, and it is not unreasonable to expect that a good profit will ultimately be realized. To the extent that the operations have been carried on, this has already been the case, and when the manufactures shall be fully developed the amount will probably be considerable.

The number of ventilating shafts connected with the drains and sewers of the city is now nearly seven hundred.

So much has been done in improving the condition of things external to the houses of the people, and with such satisfactory results, that the time may be considered now to have arrived when the insides shall receive special attention, and I trust in my next report to be able to announce a considerable amelioration in the condition of the dwellings of the poor.

JOHN LEIGH.

Town Hall, July 1st, 1878.

CITY OF MANCHESTER,
EXCLUDING BESWICK.

*Deaths from all Causes during the Years 1868-1877, including the
Deaths in Monsall Hospital.*

	Years.	No. of Deaths.
	1868...	11,242
	1869...	10,232
	1870...	9,906
	1871...	10,435
	1872...	9,551
	1873...	10,015
	1874...	9,922
	1875...	10,074
Including {	1876...	9,861
Monsall {	1877...	9,129
Deaths.		

*Deaths from Five Zymotic Diseases—Smallpox, Fever, Measles,
Whooping Cough, and Scarlatina.*

	Years.	No. of Deaths.	Rate Per 1,000.
	1868...	2,342	6·8
	1869...	1,505	4·3
	1870...	1,138	3·3
	1871...	1,201	3·4
	1872...	1,207	3·4
	1873...	1,262	3·5
	1874...	1,136	3·2
	1875...	1,009	2·9
Including {	1876...	1,338	3·7
Monsall {	1877...	1,137	3·1
Deaths.			

Deaths from Fever (Typhus and Typhoid).

	Years.	No. of Deaths.	Rate Per 1,000.
	1868...	635	1.83
	1869...	403	1.16
	1870...	392	1.13
	1871...	282	0.80
	1872...	242	0.68
	1873...	232	0.66
	1874...	188	0.53
	1875...	177	0.50
Including Monsall Deaths.	(1876...	225	0.63
	(1877...	164	0.46

*Average Rate of Mortality for the Spring, Summer, and Autumn Quarters,
subjoined, Years 1872-1877.*

Years.	Rate Per 1,000.
1872.....	26.6
1873.....	27.39
1874.....	28.28
1875.....	26.5
1876.....	25.87
1877.....	24.70

Number of Deaths and Rate per One Thousand of the Population in each Quarter of the Years 1872, 1873, 1874, 1875, 1876, 1877.

Year 1872.

	Number of Deaths.	Rate per 1,000.
March Quarter	2,539	28·9
June "	2,241	25·4
September "	2,329	26·6
December "	2,442	27·9

Year 1873.

	Number of Deaths.	Rate per 1,000.
March Quarter	2,799	31·88
June "	2,420	27·56
September "	2,515	28·65
December "	2,281	25·95

Year 1874.

	Number of Deaths.	Rate per 1,000.
March Quarter	2,451	27·84
June "	2,366	26·87
September "	2,532	28·76
December "	2,573	29·22

Year 1875.

	Number of Deaths.	Rate per 1,000.
March Quarter	3,035	34.39
June "	2,373	26.86
September "	2,246	25.43
December "	2,420	27.40

Year 1876.

	Number of Deaths.	Rate per 1,000.
March Quarter	2,821	31.83
June "	2,373	26.78
September "	2,332	26.31
December "	2,175	24.54

Year 1877.

	Number of Deaths.	Rate per 1,000.
March Quarter	2,446	27.79
June "	2,369	26.64
September "	1,989	22.37
December "	2,230	25.08

Deaths from Measles.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	46	24	79	16
Deansgate	17	7	11	6
London-road.....	24	8	20	8
Market-street ...	3	8	3	12
St. George's.....	38	21	18	67
Hulme	16	68	39	33
Chorlton	24	50	18	20
Ardwick	21	5	14	4
Cheetham.....	7	3	4	7
Totals in city...	196	194	206	173

Deaths in each Month from Measles.

Month of	Year 1874.	Year 1875.	Year 1876.	Year 1877.
January	21	22	14	10
February	7	9	14	4
March	7	23	13	10
April	11	32	32	7
May	13	27	22	32
June.....	33	20	35	27
July	19	18	28	24
August	18	13	16	15
September	10	3	6	15
October	13	5	8	11
November	16	6	7	8
December	28	16	11	10

Deaths per 1,000 Inhabitants from Measles.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	0.89	0.46	1.56	0.31
Deansgate	0.74	0.30	0.51	0.28
London-road.....	1.21	0.40	1.07	0.44
Market-street.....	0.19	0.51	0.20	0.84
St. George's.....	0.62	0.33	0.28	1.03
Hulme	0.21	0.88	0.50	0.42
Chorlton	0.46	0.95	0.34	0.37
Ardwick	0.70	0.16	0.45	0.12
Cheetham.....	0.30	0.12	0.16	0.28

Deaths from Whooping Cough.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	46	66	56	45
Deansgate	17	11	19	20
London-road ...	19	11	22	15
Market-street ...	9	6	6	4
St. George's.....	67	72	47	88
Hulme	37	58	56	76
Chorlton	31	41	27	49
Ardwick	27	27	26	22
Cheetham.....	14	14	8	13
Totals in city ...	267	306	267	332

Deaths in each month from Whooping Cough.

Month of	Year 1874.	Year 1875.	Year 1876.	Year 1877.
January	21	55	44	28
February	24	29	38	27
March	19	25	29	58
April.....	21	17	47	46
May	29	29	28	40
June.....	22	25	12	38
July	25	16	24	24
August	32	17	11	14
September	13	17	10	20
October	17	26	...	10
November	15	9	3	7
December.....	29	41	21	20

Deaths per 1,000 inhabitants from Whooping Cough.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	0·89	1·29	1·10	0·89
Deansgate	0·74	0·49	0·88	0·96
London-road ...	0·96	0·57	1·18	0·83
Market-street ...	0·57	0·39	0·40	0·28
St. George's.....	1·09	1·15	0·73	1·35
Hulme	0·48	0·75	0·72	0·95
Chorlton	0·60	0·78	0·51	0·91
Ardwick	0·90	0·88	0·84	0·69
Cheetham.....	0·61	0·59	0·33	0·52

Deaths from Fever.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	32	24	44	27
Deansgate	8	10	9	5
London-road ...	15	7	8	8
Market-street ...	9	16	53	26
St. George's.....	30	36	35	30
Hulme	39	39	27	29
Chorlton	22	25	18	14
Ardwick	22	12	15	8
Cheetham.....	11	10	13	5
Totals in city...	188	179	222	152

Deaths in each month from Fever.

Month of	Year 1874.	Year 1875.	Year 1876.	Year 1877.
January	18	16	17	24
February	11	16	12	18
March	9	15	18	16
April	8	9	18	9
May	16	10	16	9
June.....	11	9	10	12
July	17	12	6	2
August	18	12	18	6
September	24	16	25	16
October	14	30	30	14
November	22	16	22	15
December.....	20	18	30	11

Deaths per 1,000 inhabitants from Fever.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	0·62	0·47	0·87	0·53
Deansgate	0·35	0·45	0·41	0·24
London-road ...	0·76	0·36	0·43	0·44
Market-street ...	0·57	1·05	3·59	1·82
St. George's.....	0·48	0·57	0·54	0·46
Hulme	0·51	0·56	0·34	0·37
Chorlton	0·42	0·47	0·34	0·26
Ardwick	0·74	0·39	0·48	0·25
Cheetham.....	0·47	0·42	0·53	0·20

Deaths from Scarlatina.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	122	37	22	73
Deansgate	27	4	9	4
London-road ...	22	13	19	17
Market-street ...	10	22	8	3
St. George's.....	55	76	71	72
Hulme	161	59	89	102
Chorlton	30	30	43	27
Ardwick	29	46	43	24
Cheetham.....	19	28	29	19
Totals in city...	475	315	333	341

Deaths in each month from Scarlatina.

Month of	Year 1874.	Year 1875.	Year 1876.	Year 1877.
January	50	31	39	20
February	30	21	31	29
March	34	25	15	15
April.....	19	17	20	14
May	27	16	24	18
June.....	36	13	22	29
July	28	16	29	24
August	45	18	25	27
September	35	22	26	35
October	79	45	29	52
November	38	36	39	37
December.....	54	55	34	41

Deaths per 1,000 inhabitants from Scarlatina.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	2.37	0.72	0.43	1.45
Deansgate	1.19	0.18	0.41	0.19
London-road ...	1.11	0.67	1.02	0.94
Market-street ...	0.63	1.44	0.54	0.21
St. George's.....	0.89	1.21	1.11	1.11
Hulme	2.10	0.76	1.14	1.30
Chorlton	0.58	0.57	0.81	0.50
Ardwick	0.97	1.51	1.39	0.76
Cheetham.....	0.82	1.18	1.20	0.77

Deaths from Smallpox.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	1	1	7	1
Deansgate	4	0	5	2
London-road ...	0	0	4	4
Market-street ...	1	7	61	17
St. George's.....	1	1	19	5
Hulme	1	3	31	4
Chorlton	1	2	8	5
Ardwick	0	0	9	1
Cheetham.....	1	1	8	5
Totals in city...	10	15	152	44

Deaths from Diarrhœa.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	134	124	115	62
Deansgate.....	47	14	32	11
London-road.....	51	37	31	19
Market-street....	49	30	35	14
St. George's.....	122	95	94	67
Hulme	110	81	113	52
Chorlton	63	55	75	33
Ardwick	30	39	42	27
Cheetham.....	30	24	22	19
	636	449	559	304

Rate per 1,000 Inhabitants from Diarrhœa.

District.	Year 1874.	Year 1875.	Year 1876.	Year 1877.
Ancoats	2·61	2·43	2·27	1·23
Deansgate	2·06	0·63	1·49	0·52
London-road ...	2·58	1·93	1·67	1·05
Market-street ...	3·11	1·96	2·37	0·98
St. George's.....	1·98	1·52	1·47	1·03
Hulme	1·43	1·05	1·45	0·66
Chorlton	1·21	1·05	1·41	0·61
Ardwick	1·01	1·28	1·35	0·85
Cheetham.....	1·30	1·02	0·91	0·77

Seasons in which the greater number of Deaths occur from Diarrhœa.

Year 1874.		Year 1875.		Year 1876.		Year 1877.	
Week ending	No. of Deaths.	Week ending	No. of Deaths	Week ending	No. of Deaths.	Week ending	No. of Deaths.
July 11...	8	June 19...	9	June 17...	4	June 16...	2
“ 18...	26	“ 25...	8	“ 24...	5	“ 23...	4
“ 25...	54	July 3...	8	July 1...	4	“ 30...	4
Aug. 1...	91	“ 10...	6	“ 8...	12	July 7...	4
“ 8...	53	“ 17...	14	“ 15...	15	“ 14...	5
“ 15...	53	“ 24...	27	“ 22...	34	“ 21...	6
“ 22...	49	“ 31...	30	“ 29...	46	“ 28...	10
“ 29...	36	Aug. 7...	41	Aug. 5...	52	Aug. 4...	11
Sept. 5...	43	“ 14...	32	“ 12...	48	“ 11...	10
“ 12...	34	“ 21...	33	“ 19...	58	“ 18...	16
“ 19...	17	“ 28...	24	“ 26...	57	“ 25...	25
“ 26...	24	Sept. 4...	36	Sept. 2...	43	Sept. 1...	20
Oct. 3...	15	“ 11...	34	“ 9...	25	“ 8...	18
“ 10...	11	“ 18...	26	“ 16...	24	“ 15...	11
“ 17...	11	“ 25...	14	“ 23...	10	“ 22...	14
“ 24...	6	Oct. 2...	25	“ 30...	9	“ 29...	13
		“ 9...	19	Oct. 7...	8	Oct. 6...	11
		“ 16...	13	“ 14...	5	“ 13...	12
		“ 23...	7	“ 21...	5	“ 20...	6

Table shewing the Number of Deaths in each Registration Sub-District from five Zymotic Diseases, viz., Measles, Smallpox, Whooping Cough, Scarlatina, and Fever; also the number of Deaths from other causes, during the Years 1874—1877.

NAMES OF SUB-DISTRICTS.	Year 1874.		Year 1875.		Year 1876.		Year 1877.	
	Number of Deaths from Zymotic Diseases.	Total Deaths.	Number of Deaths from Zymotic Diseases.	Total Deaths.	Number of Deaths from Zymotic Diseases.	Total Deaths.	Number of Deaths from Zymotic Diseases.	Total Deaths.
Ancoats	247	1,608	152	1,491	208	1,513	162	1,277
Deansgate	73	617	32	546	53	537	37	451
London-road	80	573	39	524	73	540	52	503
Market-street	32	1,332	59	1,319	131	1,304	62	1,218
St. George's.....	191	1,599	206	1,691	190	1,599	262	1,591
Hulme	254	1,906	227	2,019	242	1,865	244	1,742
Chorlton	108	1,109	148	1,267	114	1,138	115	1,139
Ardwick	99	721	90	755	107	751	59	674
Cheetham.....	52	457	56	462	62	454	49	439
Totals	1,136	9,922	1,009	10,074	1,180	9,701	1,042	9,034

Deaths in each district from diseases of the Lungs, 1874-7.

District.	1874.		1875.		1876.		1877.	
	Deaths at all ages.	Deaths under 5 years of age.	Deaths at all ages.	Deaths under 5 years of age.	Deaths at all ages.	Deaths under 5 years of age.	Deaths at all ages.	Deaths under 5 years of age.
Ancoats	510	176	530	133	457	148	390	118
Deansgate ...	162	46	187	54	145	47	148	51
London-road...	176	43	184	48	178	38	152	35
Market-street..	95	20	93	14	72	18	87	20
St. George's...	519	178	554	169	481	173	436	150
Hulme	565	174	715	214	579	190	600	183
Chorlton	340	75	426	92	375	84	388	87
Ardwick	233	78	221	64	225	71	224	85
Cheetham.....	110	30	134	26	106	25	133	31
Totals.....	2,710	820	3,044	814	2,618	794	2,558	760

Table exhibiting the Ages at Death in the Registration Sub-Districts during the years 1874, 1875, 1876, and 1877, also the proportions per cent. which the deaths at each Age bear to the total Deaths.

District.	Year 1874..							Year 1875.						
	Deaths at 1 year and under.	Deaths at 5 years and under.	Deaths above 5 years.	Total Deaths.	Rate per cent. at 1 year and under.	Rate per cent. at 5 years and under.	Rate per cent. above 5 years.	Deaths at 1 year and under.	Deaths at 5 years and under.	Deaths above 5 years.	Total Deaths.	Rate per cent. at 1 year and under.	Rate per cent. at 5 years and under.	Rate per cent. above 5 years.
Ancoats	709	914	694	1,608	44.0	56.8	43.2	625	771	720	1,491	41.9	51.7	48.3
Deansgate	224	284	333	617	36.3	46.0	54.0	183	236	310	546	33.4	43.2	56.8
London-road	242	309	264	573	42.2	53.9	46.1	177	241	283	524	33.7	46.0	54.0
Market-street	148	220	1,112	1,332	11.1	16.5	83.5	122	200	1,119	1,319	9.2	15.2	84.8
St. George's.....	530	861	738	1,599	33.1	53.8	46.2	568	895	796	1,691	33.6	52.9	47.1
Hulme	754	977	929	1,906	39.5	51.3	48.7	722	972	1,047	2,019	35.7	48.2	51.8
Chorlton	276	457	652	1,109	24.8	41.2	58.8	308	509	758	1,267	24.3	40.2	59.8
Ardwick	238	388	333	721	33.0	53.8	46.2	245	388	367	755	32.4	51.4	48.6
Cheetham	117	177	280	457	25.6	38.7	61.3	108	185	277	462	23.3	40.0	60.0
Totals	3,238	4,587	5,335	9,922	32.6	46.2	53.8	3,058	4,397	5,677	10,074	30.3	43.6	56.4

Table exhibiting the Ages at Death, &c.—continued.

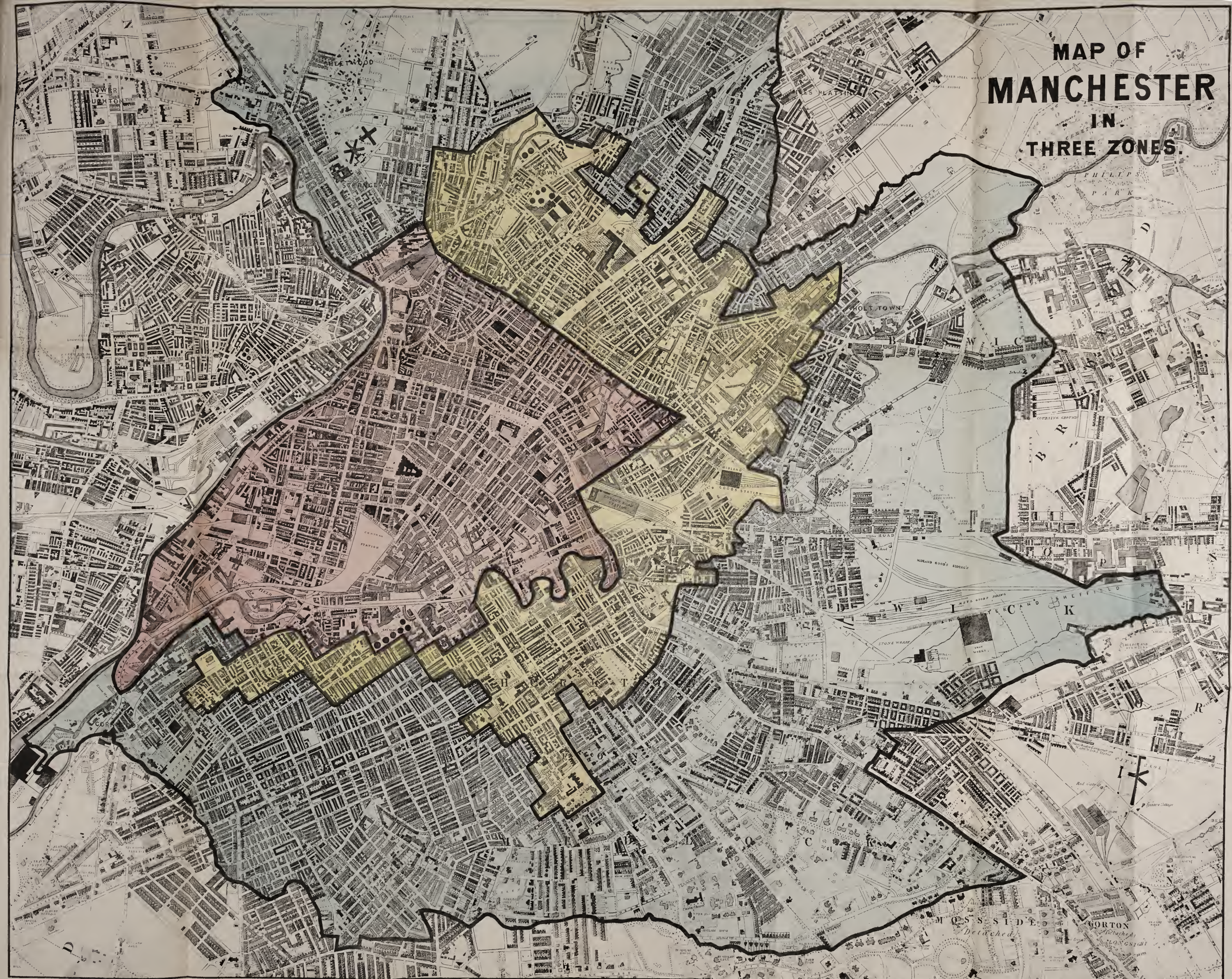
District.	Year 1876							Year 1877.						
	Deaths at 1 year and under.	Deaths at 5 years and under.	Deaths above 5 years.	Total Deaths.	Rate per cent. at 1 year and under.	Rate per cent. at 5 years and under.	Rate per cent. above 5 years.	Deaths at 1 year and under.	Deaths at and under 5 years.	Deaths above 5 years.	Total Deaths.	Rate per cent. at 1 year and under.	Rate per cent. at 5 years and under.	Rate per cent. above 5 years.
Ancoats	612	810	703	1,513	40.4	53.5	46.4	484	654	623	1,277	37.9	51.2	48.7
Deansgate	217	260	277	537	40.4	48.4	51.5	166	206	245	451	36.8	45.6	54.3
London-road	184	265	275	540	34.0	49.0	50.9	155	222	281	503	30.8	44.1	55.8
Market-street	125	189	1,115	1,304	9.5	14.5	85.5	106	164	1,054	1,218	8.7	13.4	86.5
St. George's.....	513	855	744	1,599	32.0	53.4	46.5	474	895	696	1,591	29.7	56.2	43.7
Hulme	732	948	917	1,865	39.2	50.8	49.1	606	829	913	1,742	34.7	47.5	52.4
Chorlton	292	470	668	1,138	25.6	41.3	58.7	292	469	670	1,139	25.6	41.1	58.8
Ardwick	238	386	365	751	31.6	51.4	48.6	215	327	347	674	31.8	48.5	51.4
Cheetham.....	113	191	263	454	24.9	42.0	57.9	100	172	267	439	22.7	39.1	60.8
Totals	3,026	4,374	5,327	9,701	31.1	45.0	54.9	2,598	3,938	5,096	9,034	28.7	43.5	56.3

Table exhibiting the Ages at Death in the Registration Sub-Districts during the Year 1877, also the proportions per cent. which the Deaths at each Age bear to the total Deaths.

District.	Deaths under 1 year of age.	Deaths at 1 year and under 5.	Deaths at 5 years and over.	Total Deaths.	Rate per cent. under 1 year of age.	Rate per cent. at 1 year and under 5.	Rate per cent. at 5 years and over.
Ancoats	341	282	654	1,277	26·7	22·0	51·2
Deansgate	114	86	251	451	25·2	19·0	55·6
London-road	114	102	287	503	22·6	20·2	57·0
*Market-street	92	70	1,056	1,218	7·5	5·7	86·6
St. George's	433	455	703	1,591	27·2	28·5	44·1
Hulme	416	387	939	1,742	23·8	22·2	53·9
Chorlton-upon- Medlock	275	179	685	1,139	24·1	15·7	60·1
Ardwick	199	125	350	674	29·5	18·5	51·9
Cheetham	95	71	273	439	21·6	16·1	62·1
Totals.....	2,079	1,757	5,198	9,034	23·0	19·4	57·5

* Including Hospitals.

MAP OF MANCHESTER IN THREE ZONES.



CITY OF MANCHESTER.

REPORT

OF THE

HEALTH COMMITTEE

ON THE SUBJECT OF THE APPLICATION TO THIS CITY OF THE
PROVISIONS OF THE

“ARTIZANS’ AND LABOURERS’ DWELLINGS
IMPROVEMENT ACT, 1875.”



MANCHESTER:

CHAS. SEVER, PRINTER, LITHOGRAPHER, &c., LONG MILLGATE.
1878.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

RESEARCH REPORT

NO. 100

1955

BY

J. J. KATZ

AND

R. L. KATZ

PHYSICS DEPARTMENT

UNIVERSITY OF CHICAGO

CHICAGO, ILL.

1955

PHYSICS DEPARTMENT

UNIVERSITY OF CHICAGO

CHICAGO, ILL.

1955

The Health Committee present the following Report on the subject of the application to this city of the provisions of the “Artizans’ and Labourers’ Dwellings Improvement Act, 1875” :—

Your Committee, in presenting their Report to the Council on the applicability of Mr. Cross’s “Artizans’ and Labourers’ Dwellings Act,” wish first to state that the delay which has taken place in its presentation has arisen from the desire of the members to make themselves thoroughly acquainted not only with such portions of the city as would be affected by the operation of the Act, but also with the outer zone within which not less than four thousand six hundred houses have been erected within the last seven years for the accommodation chiefly of the artizan and labouring class. They have also desired to institute such enquiries as would give them the best attainable information of the present population of the city of Manchester and its distribution. Two Reports have been furnished to the Committee by the Officer of Health, embodying for their consideration such portions of the investigations and observations made as would enable them to deal with the question submitted to them by the Council, and originating in the presentation to that body of a memorial from the Manchester and Salford Sanitary Association. Several meetings have been held, and visits made to different parts of the city of Manchester. The Committee have also visited Birmingham and Liverpool, to inspect the districts then about to be dealt with under Mr. Cross’s Act.

As the proceedings of the Committee have extended over a considerable period, and are given in chronological order in the Report drawn up by the Officer of Health, they think it best to submit such report, which is as follows :—

Preliminary Report, containing the proceedings of the Health Committee and the first Report of the Officer of Health, on the Improvement of the Dwellings of the Poor in Manchester.

At a Meeting of the Council of the city of Manchester, held the 11th day of April, 1877, was presented a memorial addressed to the Mayor, Aldermen, and Councillors of the city, from the Manchester and Salford Sanitary Association.

The memorial sets forth :—“The variation of the death-rate in the “several districts of Manchester, and especially the excessive mortality “of some of them ;” and contrasts the death-rate between some of the sub-districts in Ancoats, St. George’s, and Chorlton Registration Districts with others in St. George’s, Chorlton, Hulme, and Cheetham.

The memorial further recites :—

That, amongst the causes of excessive mortality, the defective construction and arrangement of cottage dwellings in large areas of the city hold a prominent place.

That the “Artizans’ and Labourers’ Dwellings Act of 1875” enables corporate authorities to deal effectively with this cause of ill-health and mortality.

That Birmingham, Liverpool, Glasgow, and some other large towns have availed themselves of the provisions of the Act.

That many of the districts of Manchester referred to by the memorialists are such as come within the meaning of the Act.

That the following districts of the city are those to which the memorialists more particularly allude, viz. :—Market-street sub-districts, 2, 5, and 6 ; St. George’s sub-districts, 2 to 5 and 27 to 32 in Dr. Leigh’s map, and that the detailed Report appended to the memorial of a sub-committee which visited the sub-districts 2 to 5 and 27 to 32, describes a sample of the conditions to be met with in all the above-named districts, and will show how flagrantly sanitary laws are disregarded in the construction of many of the dwellings of the poor in this city.

The memorialists pray the Council to take into consideration the desirability of putting the “Artizans’ and Labourers’ Dwellings Act” into operation at an early date, in one or more of the districts enumerated.

(Signed)

DANIEL NOBLE, M.D. *Chairman.*

ARTHUR RANSOME, M.D., *Deputy-Chairman.*

JAMES HARDIE, M.D., } *Hon. Secs.*
JOHN HADDON, M.D., }

FRED. SCOTT, *Secretary.*

(Dated) 78, Cross-street, Manchester,
April 5th, 1876.

[Detailed Report of Sub-Committee of the Sanitary Association appended.]

Report on the Condition of the small Cottage Dwellings in the District bounded by Oldham Road, Addington Street, Angel Street, St. Michael’s Church Yard, the Gas Works, and the Oldham Road Goods Station.

(From visits by Mr. F. Scott and Mr. J. Corbett, February 8th, and by Mr. J. Corbett on February 15th, 1877.)

“ Within this area there are about seven hundred back to back or single-fronted cottages, which, from the impossibility of having ventilation through them, are incapable of being made healthy dwellings. There are many other cottages almost as utterly bad as these, also larger houses used as

lodging houses but quite incapable of providing really healthy and decent accommodation.

“ Most of these buildings are old and far worn, very few of them being less than thirty years old, and most of them at least forty years old, as shown by old maps.

“ The construction of the back to back cottages is of several types :—

“ 1st. The most common, two stories high, with cellar dwelling under ; this last part generally closed as unfit for habitation.

“ 2nd. The same general arrangement but three stories high.

“ 3rd. The same arrangement without any cellars.

“ 4th. An ordinary two-story cottage *over* a two-story single-fronted cottage. (This type is used between Style-street and Old Mount-street.)

“ The courts into which about half of the smallest cottages front are of an average width of 15 feet ; many of them being less than 10 feet wide. They are generally open at one end to a street, but several of them are built all round and only entered by covered passages.

“ Some of the streets are only 18 feet wide, but the usual width is about 30 feet.

“ This district has evidently received special attention from the Corporation officials. Nearly all the old privies have been replaced by modern tub closets, and in several cases the lower room of a cottage has been appropriated to provide space for additional closets. This plan of leaving a bedroom over a nest of closets is not commendable. The streets and courts are generally very well paved and flagged. Many of the former cellar dwellings have been closed, but instead of this tending to circulate pure air under the remaining dwellings above, these closed cellars become receptacles for refuse, and so emanate foul gases, actually within the buildings.

“ There are a few places, however, still requiring immediate attention ; for instance, in Brierley’s-court, Angel-street—a very closely built place—there are only four closets for four lodging houses and four cottages.

“ Between Style-street and Old Mount-street, the latter being about 15 feet higher than the former, the cellar dwellings fronting Style-street are damp, and in some cases foul from the street earth above them, the same defect occurring in a less degree in the cellars fronting the passage by St. Michael’s Burial-ground, they being several feet below Style-street, which is behind them. In a side court off Hampson’s-court, Hatter’s-lane, there are the remains of two old-fashioned privies and a mass of ashes and filth all over the privy site and into the court. In Bennett-street, by Hampson’s-court, are two cellar dwellings, low and close, of the type usually condemned as unfit for habitation. A court called Back Foundry-street, off Foundry-street, is unpaved and therefore unclean. Andrew’s-court, off Back Thompson-street, is also unpaved.

“ Some other courts have very defective flagging and sewers, for instance, Dewhurst-court, off Ludgate-hill.

“ These are but the minor defects. The great causes for a high death rate would remain after all these items were remedied, for with seven hundred back to back or single fronted dwellings, most of them in very narrow courts and streets, it is impossible to maintain good health.

“ This district, therefore, is one demanding the application of the ‘ Artizans’ and Labourers’ Dwellings Act,’ by which its close courts and small unhealthy dwellings might be entirely swept away, a few of the narrow streets dispensed with, many of them widened, and the whole site occupied by improved cottage dwellings, provided with the essential means of decency and health, yet so economically built as to ensure a fair interest on their cost by rentals not greater than are paid for the existing miserable accommodation.

“ There appears but little probability of this district being transformed by the spread of warehouse and shop property, while its contiguity to the Smithfield markets and the Oldham-road goods station will cause a demand for small dwellings on it for many years to come.

“ N.B.—There are other similar districts in the town on which reports should also be made.”

The Memorial was referred by the Council to the Health Committee.

At the Meeting of the Health Committee, held April 16th, 1877, such Memorial was read.

The Report therein referred to was also read ; and

It was Resolved—

That the Memorial and Report be referred to a Sub-Committee for consideration and report.

The Sub-Committee so appointed visited the district referred to in the Memorial, and described in the report accompanying it ; and,

At the meeting of the Health Committee, May 14th, 1877, the following report was submitted :—

Your Sub-Committee report that they have visited and carefully inspected the streets, courts, and dwelling-houses referred to in the Memorial, and are of opinion that the houses individually or in blocks are not in such a condition as to require the application to their sites of the powers and provisions of the “ Artizans’ and Labourers’ Dwellings Act.” They, however, consider that in one or two instances it is desirable that certain alterations should be made ; such alterations your Sub-Committee intend to carry out under the powers which your Committee already possess.

The members of the Sub-Committee cannot repress the expression of their gratification at the improved condition of the districts visited, remembering what the conditions were a few years before the improvements

introduced by the Committee, when the streets and blocks of buildings were amongst the most unhealthy in the city. The following table of mortality will best show what these results have been :—

No. of Enumeration District.	Average Death-rate per 1,000 per annum in 10 years, 1861-70.	Average Death-rate per 1,000 per annum in 5 years, 1871-5.	Rate per 1,000 for year 1876.
2	32·2	24·3	23·5
3	34·5	29·8	23·5
4	21·3	30·1	35·7
5	48·3	17·4	13·4
6	34·5	27·1	25·1
27	34·5	24·5	20·8
28	34·9	28·8	23·7
29	43·4	22·4	19·5
30	41·0	23·7	25·1
31	37·5	23·3	24·5
Average rate per 1,000 in all the Districts during each period.	36·2	25·1	23·4

The Enumeration District No. 32, referred to in the report furnished by the Sanitary Association is so largely occupied by the gas works, that No. 6 District has been substituted.

At this meeting of the Committee,

It was Resolved,—

That the proceedings now read be approved ;

And further Resolved,—

That the next meeting of the Committee specially to consider as to the desirability of carrying out, in any portions of the city, the provisions of the “Artizans and Labourers’ Dwellings Act,” and for any other business that may be pressing, be held at the call of the Chairman.

At the meeting of the Committee, June 11th, 1877,

It was Resolved,—

That the Committee do meet on Friday, June 15th, at two o’clock, for the purpose of visiting certain portions of the city, and considering the resolutions adopted by this Committee on the 14th May last, in regard to the “Artizans’ and Labourers’ Dwellings Act.”

On Friday, June the 15th, the Committee, by the advice of the Officer of Health, and accompanied by him, visited a district in Ancoats, bounded by Great Ancoats-street, George Leigh-street, Poland-street,

part of Jersey-street, and Union-street; also the district lying between Union-street, Great Ancoats-street, Canal-street, New Islington, Pott-street, and Wharf-street. The first district includes the sanitary or enumeration districts numbered 7, 8, 9, 10, 11, 12. The rates of mortality in these districts have been—

No. of District.	Average for 10 years, 1861 to 1870.		Average for 5 years, 1871 to 1875.	
7	37	.....	27	
8	38	.....	33·4	
9	36·9	.....	30·9	
10	40·3	.....	27·8	
11	31·8	.....	31·1	
12	39·1	.....	35·6	
Average.....	37·2	.....	30·9	

This general district includes Blossom-street, Jersey-street, Loom-street, Cotton-street, Bengal-street, German-street, Murray-street, Pickford-street, part of Gun-street, part of Henry-street, part of Spittal-street, Elizabeth-street, and courts. In this block, many of the streets are narrow, the houses are all old, the rooms small, and many of them much dilapidated. Though the preceding table shows a large decrease in the rate of mortality during the last six years, yet the average rate for the six sanitary districts is still more than 30 per 1,000.

The Committee were of opinion that the general conditions over this area were much less conducive to health than they found in that portion of St. George's district which they had previously visited.

The area occupied by dwellings between Union-street and Canal-street, though presenting an unfavourable appearance in the narrowness of its streets, its confined courts, and unwholesome looking tenements, yet shows a large improvement in the rate of mortality within the last six years.

It comprises sanitary districts numbered 35, 36, 37, 38, 39, 40.

No. of District.	Rate per 1,000, 1861 to 1870.		Rate per 1,000, 1871 to 1875.	
35	32·3	.....	24·1	
36	32·5	.....	28·6	
37	39·8	.....	24·9	
38	35·1	.....	33·0	
39	37·5	.....	35·0	
40	31·8	.....	26·6	
Average	34·8	.....	28·7	

Before separating the Committee passed the following resolution:—

That the Committee do visit the boroughs of Birmingham and Liverpool with a view to obtaining information as to the application of the “Artizans’ and Labourers’ Dwellings Act” in those places.

And on June 29th the Committee, accompanied by the Officer of Health, went to Birmingham, and were received by Dr. Hill, the Medical Officer of Health for the borough, who explained to the Committee that a certain area had been selected by the Council of the borough for alteration and reconstruction under the powers conferred by the "Artizans' and Labourers' Dwellings Act," and that the necessary preliminary steps had been taken.

Dr. Hill accompanied the Committee over the site, which was very carefully examined. The plot selected lies near the centre of Birmingham. indeed one small prolongation of it comes into New-street, and except for a deep indentation caused on its north-west side by St. Mary's Church, is very nearly a parallelogram. Its average length is a little over half a mile, and its breadth three-eighths of a mile. It includes the Children's Hospital, Eye Hospital, Blue Coat School, Free Grammar School, Free Industrial School, Bishop Ryder's Church, four Chapels, the Gas Office, the Police Station, and the Stork Hotel.

It is bounded by Bagot-street, Princess-street, Loveday-street, Whittall-street, Bath-street, Slaney-street, and on the south-east comes to High-street, Dale-end, and Coleshill-street; on the east by Aston-road and Woodcock-street. It is very near to the Town Hall, the Great Western Railway Station, the London and North-Western Railway Station, the Post Office, several of the principal churches, principal hotels, and public offices. It consists of one of the oldest parts of Birmingham, and in the character of its buildings resembles very much the tract which lies between Market-street, High-street, Miller's-lane, and Long Millgate, when occupied by its narrow streets, confined courts, and dingy houses in olden time.

It is proposed to carry a wide new street diagonally through the centre of the district.

It appeared to the Committee that the alterations about to be made on the selected plot were required as much for commercial considerations and for public convenience as for sanitary amendment, and that similar alterations, in like circumstances, had been effected in Manchester long ago under the powers conferred by the Local Improvement Acts.

An inspection of the coloured map of properties in Manchester, drawn up by the Officer of Health, and bound up with his last report, will show that an area round the Exchange, bounded by the River Irwell, from the bottom of Deansgate, at Smithy Door, to Bridge-street, along that street, Deansgate, Peter-street, Watson-street, to Castlefield, following the River Medlock to London-road, along that street and Store-street to Great Ancoats-street, Swan-street, Miller's-lane, to the Irk, and following that river to Hunt's Bank, has been almost entirely dealt with under Improvement Acts, and in accordance with the exigencies of commerce.

The Committee were impressed with the large number of long narrow closed courts running out of the streets of Birmingham; they seemed to be more numerous and in worse condition than any in Manchester.

The Committee, accompanied by the Officer of Health, visited Liverpool on the 6th July, 1877, and were received by Dr. Taylor, the Medical Officer of Health, who conducted them over the site selected in that town for improvement under the powers of the "Artizans' and Labourers' Dwellings Act."

The plot is situated in Nash-grove, between Scotland-road and Cazneau-street, and contains about 22,487 superficial yards. It is almost entirely occupied by dwelling-houses of a low character, and is in very bad sanitary condition. It is full of narrow closed courts, and has a population, excluding roads, of 337 to the acre. The houses are very much dilapidated and out of condition, and the plot seemed eminently fitted for the operation of Mr. Cross's Act.

It seemed to the Committee much worse than any tract of similar extent known to them in Manchester.

The population is about 1,310, and the Committee were informed that the estimated cost of the land and buildings upon it was £92,600.; and the estimated value of the land left for building purposes, after the construction of roads, £30,346., leaving a loss on the purchase of £62,254.

It is calculated that about 8,824 square yards of surplus land will be available for building upon, and it is proposed on 7,000 yards of this to erect blocks of four-story dwellings in flats, while the remaining 1,824 yards, being front land, may be sold for ordinary buildings. The spaces between the backs of the four-story houses will be wide asphalted open spaces, maintained by the Corporation.

The Committee visited two sets of four-storied dwellings in a different part of the town, one set erected by the Corporation, the other by a private company. The Committee thought the latter very much the more cheerful, commodious, and pleasant-looking.

The fine breeze from the sea assisted very much in the ventilation of these blocks, and contributed to their healthiness.

Finally, on the 13th July, 1877, the Committee passed the following resolution:—

That the consideration of the question of the application of the "Artizans' and Labourers' Dwellings Act" be postponed, and that in the meantime the Officer of Health be requested to furnish a copious report as to the conditions of the various blocks of property in the Ancoats and other districts, the density of population, the respective rates of mortality, and any other information that may be useful to the Committee in forming its decision; also to state fully the powers of the Council under the various Acts of Parliament.

First Report of the Officer of Health.

If a line be drawn from the bottom of New Bridge-street, Strangeways, along the River Irwell to its junction with the River Medlock, near the end of Water-street, then along the latter river to Ardwick Bridge, in London-road, along London-road to Store-street, up the latter street to Great Ancoats-street, and along the latter, Swan-street, Miller's-lane, and Ducie-street to New Bridge-street, and down the latter to the Irwell, it will comprehend what may be especially regarded as the commercial or business part of the city. It includes the business streets so far as they are made such by warehouses, offices, and important shops. It is true that there are still some houses occupied as dwellings, and some of a very inferior character, but they are rapidly disappearing before the exigencies of commerce. The largest number are to be found between Deansgate and the River Irwell, from Bridge-street to Liverpool-road, and between Shudehill and Corporation-street.

Its greatest length, from the top of Oldham-street to the end of Water-street, near Dawson-street, is a mile and a half; and its greatest breadth, from the Gasworks at Gaythorn to the Manchester Workhouse, a mile and a quarter. The Town Hall, though not quite, is very nearly in the centre.

From Shudehill to Miller-street, warehouses and workshops are so rapidly extending that very shortly the dwelling-houses will be displaced, whilst the widening of Deansgate and the erection of the buildings and new station for the Cheshire Lines Railway will soon so enhance the value of the land near Deansgate, that cottages will give place to commercial property. It is certain that over this large tract no cottage dwellings once pulled down will be replaced by others.

Total, 616 acres; houses per acre, 9.

Outside an irregular line which crosses Red-bank, Water-street, Newtown; Tebbutt-street, Rochdale-road; Lees-street, Oldham-road; Butler-street, Beswick-street, and Pollard-street, Ancoats; Fairfield-street, Tipping-street, and Downing-street, London-road; Higher Temple-street, in Ardwick; Brook-street, Oxford-street, Ormond-street, in Chorlton-on-Medlock; and forms the inner boundary of nearly the whole of Hulme, the dwelling-houses in the city have all been erected since 1831. As a rule the streets are fairly wide and the houses moderately commodious.

It is within these lines, outside the commercial pale, and within the newly erected property, that the worst dwellings in the city are to be found—narrow streets, confined courts, and dilapidated houses. The average breadth in the districts of St. George's, Ancoats, Ardwick, and Chorlton-on-Medlock is about one-third of a mile. In Hulme it is a small and narrow tract lying near to the Medlock.

Within the irregular ring here described there are two areas which especially deserve the attention of the Committee in view of the adoption of

any measures for the destruction and reconstruction or for the amelioration of the condition of the dwelling-houses thereon.

The largest is bounded by Oldham-road, Poland-street, Union-street, and Great Ancoats-street. In length it is five-sixteenths of a mile, and in breadth nearly a quarter of a mile. The average mortality of the sanitary districts included within it is 29·655. The average density of population is 388·3 persons to the acre. The highest density is 740 persons to the acre. The lowest, owing to a portion of the area being occupied by factories, is 116. But there occur also these densities, 560, 483, 465, and 430.

The average death-rate per 1,000 inhabitants for the whole district, during the ten years 1861 to 1870, was 38·3. The average death-rate for the next succeeding five years, 1871 to 1875, was 30·0 very nearly.

As there is a considerable amount of commercial property, mills, workshops, &c., between Jersey-street and Union-street, owing to the Rochdale Canal running on the outer side of the latter, the area may be advantageously diminished by making Jersey-street one of the boundaries, and so reducing the area to about $23\frac{3}{4}$ acres.

But since 1871, cellar dwellings have been closed to the number of 144, and estimating that each cellar would on an average be occupied by three persons, this would give a total cellar population of 432, which number deducted from 6,781 will give 6,349 as the present population; and a death-rate for 1876 of 26·4 per 1,000.

DISTRICT

Bounded by Oldham-road, Poland-street, Jersey-street, and Great Ancoats-street.

Area about.....23·75 acres.

Calculated population.....6,349

Density of population.....267 persons per acre.

Wide Streets in the District.

George Leigh-street,	German-street,
Blossom-street,	Bengal-street,
Jersey-street,	Spittal-street,
Elizabeth-street,	Henry-street.
Poland-street,	

Narrow Streets in the District.

Boond-street,	Hood-street,
Primrose-street,	Gun-street,
Portugal-street,	Cotton-street,
Silk-street,	Murray-street.
Loom-street	

*Courts and Yards.**Boond-street.*

No. 3 Court.

Gun-street.

No. 1 Court, No. 2 Court,
No. 3 Court,
Shepherd's-court,

Pilling's-court,
Stopford's-court,
Second No. 2.

Henry-street.

Henry's-court,
Kenyon's-court,

Ranford's-court,
Perkins'-court.

Cornwall-street.

No. 4 Court.

Spittal-street.

Clegg's-court.

Primrose-street.

Butterworth's-court,
No. 27 Court,

Butterworth's-court No. 2,
McGee's-buildings.

Loom-street.

Jepson's-court.

Silk-street.

Sutcliffe's-court,
Clegg's-yard,
Fielding's-yard,
Fielding's-court,
Gerrard's-court,

Smith's-court,
Cinder-street,
Back Portugal-street,
Nadin's court.

George Leigh-street.

Walker's-court,
Cowell's-court,
Wellington-court,
Albert-buildings,
Albert-buildings No. 2,
Chadwick's-court,
Adam's-court,

St. Mary's-court,
Swan-court,
Bennett's-court,
Hewitt's-place,
Hewitt's-court,
Hewitt's-buildings.

Blossom-street.

Hampson's-court,
Jackson's-court,

Blossom-street,
Nos. 1, 2, 3, and 4 Courts.

Hood-street.

Robinson's-court, Shilling-
place,

Shilling-court.

This district, bounded by Oldham-road, Poland-street, Jersey-street, and Great Ancoats-street, contains the enumeration or Sanitary Districts Nos. 1, 2, 3, 4, 5, 7, 8, 11, 12 of the Registration District of Ancoats. It contained, at the census of 1871, 1,318 inhabited houses, with a population of 7,426, or an average of 5·6 persons per house. In the enumeration lately made by the officers of the Nuisance Department, 1,211 inhabited houses were reported, which, assuming that the number of persons to each house continue the same, would give a population of 6,781. The number of deaths registered during the year 1876 was 168, which gives a rate of 22·6 per 1,000 upon the population of the census, and a rate of 24·7 upon the population as above estimated, or of 26·4 on the population corrected for the numbers removed by the closing of the cellars.

On the right hand side of Cheetham Hill-road, at its lower end, near Ducie Bridge, is a small triangular district, bounded by the River Irk, Johnson-street, Park-street, and Red Bank, and including Verdon-street, Back Verdon-street, Scotland, Scotland-court, Back Scotland, and one aide of Park-street. Its greatest length is 105 yards, its greatest width 90 yards, its least width 30 yards, and it contains about 108 houses, all occupied as dwellings. Verdon-street is very narrow, whilst Back Verdon-street is a mere court. The houses are mostly small, dirty, and over-crowded. The estimates of houses are exclusive of 39 houses in Johnson-street.

The population of the district, including Johnson-street, in 1871 was 869. A recent enumeration by Mr. Dawson gave 830.

The whole district, including Johnson-street, forms one Sanitary or Enumeration District, No. 2 of the Market-street Registration District.

The death rate for the ten years 1861-70 was 29·9 ; for the succeeding five years, 1871-75, 31·3.

In the lower part of St. Michael's Ward there are two districts separated from each other by Ashley-lane, in which the houses are small and dirty, many of them considerably dilapidated, and occupied by a low and generally vicious class.

The first is bounded by the River Irk, by Scotland Bridge, the lower part of Long Millgate, and by Ashley-lane to Union Bridge, opposite Back Irk-street. It contains a portion of Charter-street, Crown-lane, Nelson-street, Little Nelson-street, Nelson-court, Holden-street, Nos. 1, 2, and 3 Courts, Ashley-lane; Bone-street; Millett's-court, Davies's-buildings; No. 1 Court, Nelson-street; Knowsley-place; Pump-yard; Lydia-street; Derby-court.

The second district is bounded by Ashley-lane, Long Millgate, Miller-street, and the Old Factory-yard, Miller-street, and includes part of Charter-street, Crown-street, Factory-street, Back Blakeley-street, Joiner-street, Back Joiner-street, Ledger-street, Beswick-row, Leadenhall-street, Oswald-street, Munday-street, Comet-street, No. 1 Court, Charter-street,

Mellon-court, Munday's-court, Munday's-place, Shaw's-court, Hulme's-court, and Crown and Cushion-court.

In addition to the large district described in Ancoats, bounded by Oldham-road and Jersey-street, there are two smaller districts in the same Registration District of Ancoats.

The first is bounded by Union-street and the Rochdale-canal, by Great Ancoats-street, Mill-street, Wharf-street, Smith's-court, and Cotton-street, and contains Newton-street, Fawcett-street Allum-street, John-street, part of Pott-street, part of Canal-street, part of Back Mill-street, Grammar-street, Factory-street, Brook-street, Dimity-street, Back Fawcett-street, St. Thomas-street, Back Cotton-street, Henry-street, Pickford-street, Barton's-buildings, Willoughby-court, Pott's-court, Darlington's-buildings, Peter's-court, Ebenezzer-court, and Barratt's-place.

The second lies between Pott-street, Canal-street, Wharf-street, and New Islington, and includes Beatson-street, Sandford-street, Lower Canal-street, Caroline-street, Pole-street, Coates-street, Back Coates-street, Back Beatson-street, Spinner-street, Coal-street, Fairbottom's-court, Horne-street, Short-street, Horne-place, St. Jude's-place, and Baker-street.

On the south-west side of Great Ancoats-street is a district forming a parallelogram bounded by that street, by Chapel-street, Travis-street, and Portugal-street, and containing Long-street, Heyrod-street, Watson-street, Wesley-street, Norton-street, Aspden-street, Fletcher-street, Fair-street, Paris-street, Church-gates, Back Watson-street, Hardman-street, Baker-street, Dearden-street, Morville-street, Keeling-street, Richardson's-buildings, Whittaker's-buildings, Nos. 1, 2, 3, and 4 Courts, Long-street, Nos. 1, 2, 3 Courts, Heyrod-street, No. 1 Court, Norton-street, Murray's-place, and Wilbraham-place.

The greatest length of the district is about 325 yards, and its greatest breadth about 170 yards.

The lower two-thirds of the Chapel-street boundary is occupied by the works of Messrs. Parr, Curtis, and Madeley, by a cotton mill and a foundry.

Many of the houses in this district are small, old, and unhealthy, and the death rate is high.

To enable public authorities to deal with districts the houses in which are almost incapable of amendment, and in which the population is too dense for health, was the special object of Mr. Cross's last "Artizans' and Labourers' Dwellings Act."

In every large town there are or have been districts in which the sanitary conditions are or have been such that no moderate amelioration of those conditions could ever bring them within the average rate of mortality of their respective towns.

Such districts the Health Committee were shown in Birmingham and Liverpool, in which long and tortuous courts and alleys, formed in some cases of three and four-storied tiers of dwellings, ran out from narrow streets, absolutely closed all round and incapable of ventilation; the houses old and dilapidated, reeking with filth, and occupied by a squalid and degraded population.

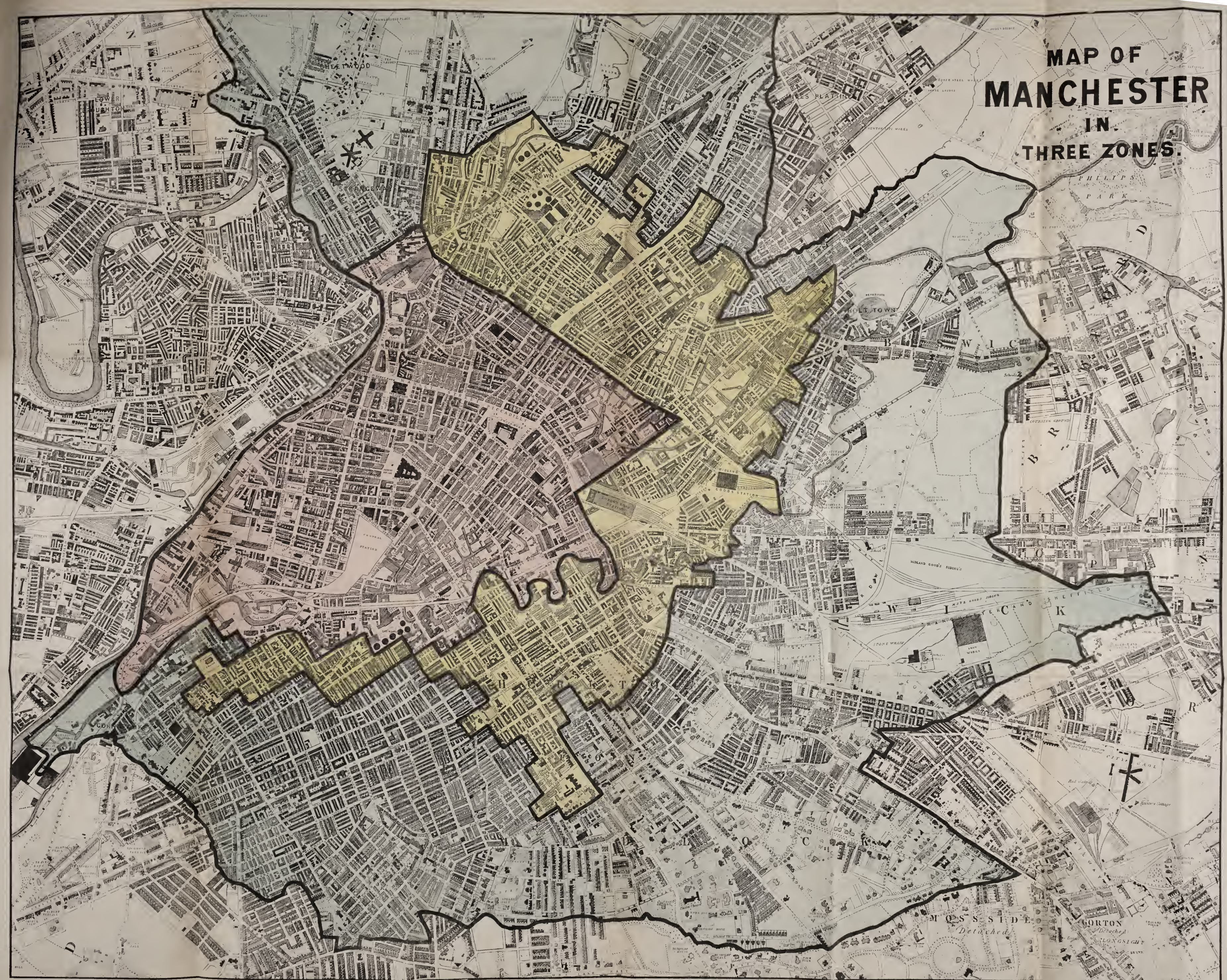
For the most part the dwellings are of considerable antiquity; they grew up at a time when the laws of health were little understood.

It was not owing to the price of land that these houses were built so close together and of such small dimensions, for land at the time of their erection was of comparatively small value. They were built in ignorance, and perhaps huddled and small for the sake of warmth and economy. Such districts as those of Liverpool and Birmingham existed once in Manchester, although we have nothing so bad now. They were to be found circumscribed by the Irwell, the Irk, and the Medlock, the junction line being formed by Great Ancoats-street, Swan-street, and Miller's-lane. But the exigencies of commerce and the spirited policy of the Improvement Committee, aided by the funds supplied by the Manchester Gas Works, have swept the greater part of them away, and wide streets and palatial warehouses occupy the sites where, some years ago, fever dens alone were found. I well remember when Little Ireland, in Oxford-street,—the streets and courts on the left of Gaythorn, on the right and left of Deansgate,—the streets going off Shudehill, and the courts off Long-millgate, together with most of the streets to the right of Portland-street, furnished a constant supply of fever cases. At this time, the whole district between the Irwell, Irk, Medlock, and Great Ancoats-street, forming a large part of the township of Manchester, contains only 5,308 inhabited houses, or 27,866 inhabitants on 616 acres, equal to 45 persons per acre. Unlike, then, what has been done in most other towns, the worst parts of Manchester lying in the centre of the city have been cleared away, and there remains a ring of streets and houses lying between this commercial centre and the newer houses erected since 1831, which, though not so bad as equal areas in many other towns, claim attention as being the worst now remaining. The coloured map before you shows the ring, and I have circumscribed and described the worst portions lying within it.

The part coloured green on the map represents that portion of the city which has been covered with dwellings since 1831, and a visit to almost any part of this area will show that the streets are wider, the courts fewer, the houses in better condition, the means of ventilation better, and the opportunities for sanitary improvement superior to those afforded by any of the districts described as occurring between the two inner rings or lines on the map.

Looking at the fact that we have almost relieved the city from any

MAP OF MANCHESTER IN THREE ZONES.



permanent endemic of typhus or typhoid fever, and that we have very largely reduced the general death-rate, it may not unreasonably be asked why we should not be content simply to persevere in the same course, and trust to a reasonable time, with a continuance of the same course of exertion, for the amelioration of the sanitary condition of the people. To this it may be replied that there are districts within the ring described that can never be brought up to the condition of those outside the ring, that the streets are narrow, the courts numerous, small, and ill-ventilated, the houses generally old, out of repair, and saturated with human exhalations.

So considerable is the value of land even within the ring under discussion, that in view of any extensive sanitary operations, it is important to consider by what structures the present tenements should be replaced in case of demolition.

If the necessary area cannot be obtained laterally, it must be obtained vertically, and the high price of land, coupled with the necessity for open spaces, wider streets, and freer ventilation, has led in London, Liverpool, and Glasgow, to the erection of blocks of buildings of four or five stories, and calculated to hold several hundreds of people. It is contemplated to erect similar piles of buildings in Birmingham, as residences for the working people displaced in intended alterations. These piles have been called "Barrack" buildings, "Flat" systems, &c. The density of population in these buildings, when fully occupied, is necessarily very great, and it is unfortunate that our experience of the rate of mortality within them is very limited. Almost all new dwellings have a comparatively low rate of mortality, and these have in this country scarcely been erected a sufficient time to test them satisfactorily. In estimating the mortality within them, it is necessary to take into consideration not only the number of inhabitants in any given block, but also their ages, occupations, and condition. In the first place, the rents are rather high, and, therefore, only such persons as are in receipt of moderately good wages would become the tenants; next, the tenants are required to be of good character, and respectable in conduct; they are, therefore, a picked population—not drunkards, nor dirty, nor vicious. Attached to each block is a superintendent, whose duty it is to see that the dwellings are kept clean, ventilated, &c. The upper stories of a block would seem to be inaccessible to elderly people; it is probable, therefore, that the average age of the occupants of the blocks is usually below that of a similar number outside.

It may fairly be assumed that the tenants of these blocks hitherto have been above the class to which they legitimately belong,—that they are a picked population, temperate, steady, and in the receipt of good wages, and younger than the average for a like number, and we have a right to assume that the mortality is considerably below the average of the district in which the houses stand.

It appears from a paper by Mr. Humphreys, of the office of the Registrar-General, in the *Sanitary Record* of March last, that in the Peabody-buildings, with a population of 4,982 in 1875, consisting of working classes in the receipt of wages averaging 24s. per week, the death-rate from all causes was 24·3 per 1,000, against 23·7 in all London. The average number of children living in the buildings under 5 years of age was 1,069, and the deaths at these ages were 87, equal to 81·4 per 1000; the death rate in all London at these ages was 77·7 per 1,000 during the year. Among children aged between five and twenty years the death-rate in the Peabody-buildings was equal to 4·3 per 1,000 against 5·7 in London. At the next group of ages, among adults aged between twenty and forty years, the Peabody death-rate was only 3·1 per 1,000 among the 1,602 persons living at those ages, whereas the average London rate was 9·2. Among persons aged between forty and sixty years, the death-rate was 19·4 in the Peabody-buildings, whereas it averaged 22·2 in all London. On the other hand the death-rate among persons aged upwards of sixty years was equal to 107·8 per 1,000, while the average rate in London during the year was 78·3. With regard to this high death-rate among persons aged over sixty years, it should be remembered that the average number living at this age in the buildings was but 102, and the deaths eleven; the numbers being too small for the calculation of a trustworthy rate. Compared, therefore, with the average rates which prevailed in all London, the death-rate in the Peabody population in 1875 showed an excess among children under five years of age and among elderly persons, whereas it was below the London average at each of the three other groups of age. Of the 121 deaths in the Peabody-buildings in 1875, thirty were referred to the seven zymotic diseases, showing a proportion of 24·8 per cent. to the deaths from all causes; the proportion of deaths from these seven diseases in all London during the year was only 16·5 per cent. The thirty deaths from these zymotic diseases were equal to a nominal rate of 6·0 per 1,000 persons living in these eight groups of buildings, whereas the average zymotic rate last year in the whole of London from the seven zymotic diseases was only 3·9 per 1,000.

The deaths referred to diseases of the lungs were 28, and equal to an annual rate of 5·6 per 1,000, the rate from the same diseases in all London averaging 5·1 per 1,000. It must be said, however, the Peabody death-rate is undoubtedly underrated, on account of the impossibility of debiting to populations its due share of "institution deaths."

My friend, Dr. Tatham, has kindly furnished me with the vital statistics for the last four years of the "Industrial Dwellings" in Greengate, Salford, from which it appears that in the four years 23 deaths have taken place among an average population of 223 persons, which is equal to an annual death-rate of 26·9. The number of persons and the term are too small for

the formation of an accurate estimate of mortality, but, extending over four years, the figures probably give an approximate estimate.

From Dr. Russell, of Glasgow, within which city the most extensive alterations have been carried out, I learn that they have been effected, not under Mr. Cross's "Artizans and Labourers' Dwellings Act," but under a special Act, and that the inhabitants of the area have been so scattered and spread over the entire city, that no estimate of the mortality of the kind I wanted could be given.

From Dr. Taylor, the Medical Officer of Health for Liverpool, I have received some interesting tables respecting the block houses, of four or five tiers each, which were visited by the Committee under the guidance of Dr. Taylor. These tables I append. It seems that the net income from the St. Martin's Cottages, which was £971. in 1870, had declined in 1876 to £714., and the interest from £5. 8s. 3d. per cent. in 1870 to £3. 19s. 9d. per cent. in 1876. The expenditure had increased from £394. in 1870 to £851. in 1876. In a letter dated October 18th, 1877, Dr. Taylor says:—"The death-rate at Sylvester Cottages was, for 1876, 25·2 per 1,000. "For St. Martin's Cottages, for 1875, 27·7 per 1,000; for 1876, 35·8 "per 1,000. The death-rate for 1876 in Scotland-yard, in which they are "situated, was 33·8, and for the whole borough 27·5. These returns do "not support the principle of large blocks of dwellings; but the period is "too short and the population too small to place much reliance upon, or "draw any inference from, to aid us in forming any satisfactory conclusions."

To summarise the statements thus far made and the facts recorded:—

It is certain, from the evidence of maps and from the memory of persons now living, myself among the number, that the worst portions originally of the city of Manchester in a sanitary sense, spread over an area of about 616 acres, have been very largely dealt with, and the buildings demolished under the powers of the Local Improvement Acts;—

That the dwelling-houses yet remaining within this area are in course of rapid removal under the exigencies of commerce;—That outside this area, and within a ring or line marking the inner boundary of houses erected since 1831, there is an area of varying width occupied by dwelling-houses of considerable age, situated in narrow streets and in courts, and in inferior condition to those outside the ring, and coloured green on the map;—

That by the action of the Health Committee and its officers, the conditions of health in this area or district have been greatly improved, and the rate of mortality or death-rate been much lowered since the commencement of the Committee's operations;—

That in the class of zymotic diseases this has been especially apparent;—That at the present time there is no portion of the city of Manchester which can compare in unhealthiness and bad sanitary condition with the districts visited by the Committee in Birmingham and Liverpool, or which

approximates in its mortality to the high death-rate stated by the respective medical officers to exist in those districts ;—

That operations under the “ Artizans’ and Labourers’ Dwellings Act,” so far as can be derived from the experience of Liverpool, are exceedingly costly ;—

That the experience hitherto derived in London, Liverpool, and Salford, respecting the four-tier block or barrack-buildings or system of flats, is not such as to enable us at present to pronounce a favourable opinion respecting them, and that further experience is required ;—

That as great a diminution in the death-rate in districts in Manchester specially treated by the Health Committee has taken place as we have any evidence has been accomplished in the four-storey sanitary buildings erected in Liverpool, London, and Salford, the only three English towns of which we have any information in respect of such buildings ;—

That from an economical point of view, or as investments, the returns received respecting such buildings in Liverpool are not favourable or encouraging.

If, with these facts before them, and bearing in mind that we have no real fever nests within the city, and that the death-rate, though high in comparison with that of non-manufacturing or smaller towns, is yet very much ameliorated over the whole city, and is exceptionally high in only few and small localities, the Committee still think it desirable to proceed with greater speed and under a broader method of treatment,—I would invite their attention to the two districts mentioned in the earlier part of this Report.

I must remind you that the death-rate for the whole of the city during the present year now approaching completion is, exclusive of the deaths from small-pox in Monsall hospital, which may be looked upon as accidents, only 25 and a fraction.

There are four courses of action open to us :—

We can close certain dwelling-houses as unfit for human habitation ; we can pull down, or cause to be pulled down, certain buildings which interfere with the healthiness of other dwellings ; we can deal with small blocks of property, and so far improve without destroying them as to make them fairly healthy habitations ; or, finally, we can deal with large areas under Mr. Cross’s Acts, and cause the removal and reconstruction of all the dwellings thereon.

I have thought it desirable to lay before you the Report at this point, and especially as the time is now short within which the Committee itself may receive some alterations and reconstruction.

I think it will be apparent that in a city like Manchester, which has already undergone such extensive changes, involving the destruction of its worst portions, and with a death-rate some of the highest terms of which

are spread over nearly the whole city, coupled with the very limited experience yet acquired of the result of extensive demolitions of house property, and the somewhat unsatisfactory results of the substitution of "Barrack" or "Block" buildings for the ordinary two-storied dwellings, a very grave case is before us, one requiring much consideration, and for which we may very reasonably desire to have larger experience from the pioneers of such movements as are now pressed upon us in other towns.

It would be unjust to omit the statement that long before the presentation of the memorial from the Sanitary Association, and long before the letter of Councillor Brierley, the subject matter of this Report had occupied the serious and earnest attention of the Chairman, of the Committee, and of the Officer of Health. It is scarcely necessary to remind you that nearly ten years ago the Officer of Health inaugurated a society for the erection of improved dwellings for the working classes. The society is still in existence, and the houses erected by it have had a death-rate of only 12·6 per 1,000 during the seven or eight years since their erection; and this fact increases the difficulty of substituting block buildings for the dwellings now occupied by the poor in insanitary districts.

Whatever may be decided, the districts calling for earliest attention are situated in Ancoats and the eastern part of London-road Registration District, with one small block in Red Bank.

JOHN LEIGH.

The following letters have also been received by the Committee, and are now submitted:—

[COPY.]

" Town Hall, Manchester,
" 22nd October, 1877.

" Dear Sir,—With reference to your conversation with me last week, I have to inform you that the Statutory powers of the Corporation upon the subjects referred to are as follows. No account has, I may say, been taken of powers possessed by magistrates for these purposes, nor of any powers existing with respect to buildings in a ruinous or dangerous condition.

" Closing of Houses.

" 'The Manchester Corporation Waterworks and Improvement Act, 1867,' section 41, enacts:—

" In any case where it is certified to the Corporation by an Inspector of Nuisances, or by any two medical practitioners, that any building or part of a building is unfit for human habitation, the Corporation may, by their order affixed conspicuously on such building or part of the building, declare the same is not fit for human habitation, and shall not, after a date therein to be specified, be

inhabited ; and any person who shall, after the date or time mentioned in such order, let or occupy, or continue to let or occupy, or knowingly suffer to be occupied such building or part of a building, shall be liable to a penalty not exceeding five pounds, and for a continuing offence not exceeding forty shillings for every day during which the offence may continue. Provided always that if at any time after such order the Corporation shall be satisfied that such house has become or been rendered fit for human habitation, they may revoke their said order, and the same shall thenceforward cease to operate.

“ Demolition of Houses.

“ ‘The Artizans’ and Labourers’ Dwellings Act, 1868,’ authorizes the Corporation—upon the written report of the Officer of Health that premises are in a condition or state dangerous to health so as to be unfit for human habitation (section 5), and of the Surveyor as to the cause of the evil and the remedy thereof, and if such evil is occasioned by defects in any premises whether the same can be remedied by structural alterations and improvements, or otherwise, or whether such premises or any and what part thereof ought to be demolished (section 6)—*to order premises to be demolished* ; and by section 20,

“ If the requirements of the order involve the total demolition and not the improvement of the premises specified therein, *the owner shall, within three months after service of the order, proceed to take down and remove the premises* ; and if such owner fail therein, then the local authority shall proceed to take down and remove the same, and the local authority shall sell the materials, and after deducting the expenses incident to such taking down and removal, pay over the balance of the moneys, if any, to the owner.

“ The definition of the premises is ‘any dwelling-house or inhabited building, and the site thereof, with the yard, garden, outhouses, and appurtenances thereto or usually enjoyed therewith.’

“ No compensation is, under this Act, payable to owner or occupier.

“ ‘The Artizans’ and Labourers’ Dwellings Improvement Act, 1875,’ contains the following preamble :—

“ Whereas, various portions of many cities and boroughs are so built and the buildings thereon are so densely inhabited as to be highly injurious to the moral and physical welfare of the inhabitants ;—

“ And, whereas, there are in such portions of cities and boroughs as aforesaid, a great number of houses, courts, and alleys, which by reason of the want of light, air, ventilation, or of proper conveniences, or from other causes, are unfit for human habitation, and fevers and diseases are constantly generated there, causing death and loss of

health, not only in the courts and alleys, but also in other parts of such cities and boroughs ;—

“ And, whereas, it often happens that, owing to the above circumstances and to the fact that such houses, courts, and alleys, are the property of several owners, it is not in the power of any one owner to make such alterations as are necessary for the public health ;—

“ And, whereas, it is necessary for the public health that many of such houses, courts, and alleys, should be pulled down, and such portions of the said cities and boroughs should be reconstructed ;—

“ And, whereas, in connection with the reconstruction of those portions of such cities and boroughs, it is expedient that provision be made for dwellings for the working class who may be displaced in consequence thereof.”

“ The machinery for carrying this Act into effect consists of a report from the Officer of Health,—a resolution of the Council declaring an area to be unhealthy,—an improvement scheme prepared by the local authority,—a local inquiry on behalf of the Local Government Board, and then Parliamentary authority by means of a provisional order. After this, it is necessary to assess the value of the property, and to take the other steps mentioned in the 9th section of the Act, which is as follows :—

“ When the confirming Act authorizing any improvement scheme of a local authority under this Act has been passed by Parliament, it shall be the duty of that authority to take such steps for purchasing the lands required for the scheme, and otherwise for carrying the scheme into execution as soon as practicable. They may sell or let all or any part of the area to which such scheme relates to any purchasers or lessees for the purposes and under conditions that such purchasers or lessees will, as respects the land so purchased by or leased to them, carry the scheme into execution ; and, in particular, they may insert in any grant or lease of any part of the area, provisions binding the grantee or lessee to build thereon as in the grant or lease prescribed, and to maintain and repair the buildings, and prohibiting the division of buildings, and any addition to or alteration of the character of buildings without the consent of the local authority, and for the re-vesting of the land in the local authority, or their re-entry thereon on breach of any provision in the grant or lease. The local authority may also engage with any body of trustees, society or societies, person or persons, to carry the whole or any part of such scheme into effect upon such terms as the local authority may think expedient ; *but the local authority shall not themselves, without the express approval of the confirming authority, undertake the re-building of the houses, or the execution of any part of the scheme, except that they may take down any or all of the buildings upon the area and clear the whole or any part*

thereof, and may lay out, form, pave, sewer, and complete all such streets upon the land purchased by them as they may think fit; and all streets so laid out and completed shall thenceforth be public streets, repairable by the same authority as other streets in the district.

“ Provided, that in any grant or lease of any part of the area which may be appropriated by the scheme for the erection of dwellings for the working classes, the local authority shall impose suitable conditions and restrictions as to the elevation, size, and design of the houses, and the extent of the accommodation to be afforded thereby, and shall make due provision for the maintenance of proper sanitary arrangements.

“ Provided, also, that in any case in which the local authority erect any dwellings out of funds to be provided under this Act, they shall, unless the confirming authority shall otherwise determine, sell and dispose of all such dwellings within ten years from the time of the completion thereof.

“ The local authority may, where they think it expedient so to do, without themselves acquiring the land, or after, or subject to their acquiring any part thereof, contract with the person entitled to the first estate of freehold in any land comprised in an improvement scheme, for the carrying out of the scheme in respect of such land by such person.

“ Yours truly,

“ W. H. TALBOT,

“ *Deputy Town Clerk.*

“ John Leigh, Esq.”

“ The City Surveyor, in accordance with the request of the Chairman, on the 22nd instant, has inspected the property bounded by Oldham-road, Great Ancoats-street, Jersey-street, German-street, Elizabeth-street, and Poland-street, comprising about $17\frac{1}{4}$ acres of net building land, and has made an approximate estimate of the cost of purchasing the whole, which amounts to about £1,000,000.

“ J. G. LYNDE,

“ *City Surveyor.*

“ To the Health Committee,

“ 25th October, 1877.”

Second Report of the Officer of Health on the application of the “ Artizans’ and Labourers’ Dwellings Act ” to Manchester.

In my last Report I showed that there is a large tract occupying a great part of the Township of Manchester, and of which the Town Hall site is nearly the centre, within which great changes have been effected. This tract is bounded by the Rivers Irwell and Medlock, by London-road, Store-street, Great Ancoats-street, Swan-street, Miller-street, Ducie-bridge, and New Bridge-street down to the Irwell, and includes an area of about 616 acres. A careful enumeration of the dwelling-houses has shown that over this extensive tract there are not more than an average of nine houses to the acre. It is not meant to be asserted that on no portion of this area there is not a larger number of houses, for in some limited districts, and especially between Deansgate and the River Irwell, south of Bridge-street, the houses are numerous and in bad condition, but they are rapidly disappearing under the exigencies of commerce.

On this tract, exclusive of what has been expended under the Market-street Improvement Act, the Corporation and its predecessors—the Commissioners of Police—have expended out of the profits of the Gas Works, since 1825, more than a million and a half of money in the widening of old streets, the opening out of new streets, the destruction of courts and alleys, the abolition of piles of old buildings, and the removal of the fever haunts, which afforded a constant supply of cases within my remembrance. The actual net expenditure, including the Market-street Improvement, has been £1,959,426., to which must be added amount owing for properties purchased, £138,029., making a grand total of £2,097,455., for altering, improving, and constructing 215 streets, &c. To this must also be added a sum of about £153,000. for improvements in the out-townships. It is only necessary to call to mind what was the condition of Little Ireland, off Oxford-road, with its 1,700 inhabitants; of the streets and courts off Gaythorn, Deansgate, Long-millgate, and the streets to the south of Portland-street; and even on the spot now occupied by Albert-square and the Town Hall, when Clarence-street and Gee’s-buildings occupied the site; to realise how much has been accomplished in the destruction of bad and fever-haunted property. When to this is added the large destruction of some of the worst houses within the area now discussed by the various Railway Companies, and notably those existing between Deansgate and Lower Mosley-street, and occupying not less than 17 acres, and those in the district between Great Bridgewater-street and Little Peter-street, covering 5 acres, by the Cheshire Lines Company, at a cost of about three-quarters of a million sterling, it will be seen that for many years past operations

similar in all respects save one to those contemplated to be carried out under Mr. Cross's last Act have been carried out at a very large outlay, which have changed the character and aspect of a district equal in area and population to a considerable town.

The widening of streets and the opening out of new routes led to a large extension of commercial enterprise, and as old fever-nests were swept away, warehouses and other places of business arose on their sites, and afforded employment to a class of persons whose wages allowed them to live in the outer zone of the city, or close beyond it, and whose hours of labour did not commence so early as to make the distance a consideration.

The increased value which land within this area acquired led in many instances to the removal of mills and large workshops, as the sites paid better for warehouses than for mills, whilst some of them gave way to the course of improvement, lying as they did in the lines to be traversed. In scarcely any instances were these re-erected or replaced by others near the original sites. They were removed to the outer zone of the city, and nearly to the outer boundary of that zone, mainly on its eastern side, and new and fairly wide streets were laid out, and houses erected with good yards, a space of 25 feet between the backs of the houses, separated by passages not less than 5 feet wide, for the working men and women to whom these mills furnished employment, and thus concurrently with the destruction of the unhealthy property in the middle of the city, and the removal of the occupants, new and more commodious and better houses arose for their occupation in healthier localities, and contiguous to their places of employment, which had been driven from their former sites.

I have lately employed a very intelligent officer of the Health department, in visiting the mills, workshops, and manufactories of large size, situated on the outskirts of St. Michael's, New Cross, and Ardwick Wards, and branching out into Harpurhey, Newton Heath, Beswick, Bradford, Openshaw, and West Gorton, yet all within the Parliamentary Borough of Manchester, and ascertaining the number of persons employed in each, and the nature of their employment, or of the manufactures carried on.

He finds that there are 26 mills and 33 workshops of large size, giving employment to 19,377 persons, and that of these about 15,000 are male adults. Adopting so small a multiple as 3, the latter number would represent a population of 45,000 persons. There are in addition, however, numerous smaller workshops, giving employment to a large number of persons. In consequence of the depression in trade some of the mills and workshops are not working full time. Probably, if all the persons engaged in the smaller works were estimated, and the whole of the establishments were running full time, the workmen would be found to represent a population of upwards of 100,000.

The actual number may be deduced from the following tables:—

*Number of Streets and Houses erected in the North East Suburbs of
Manchester during the last 25 years.*

	No. of Streets.	No. of Houses.
District between Stockport-road and Hyde-road	113	3,502
“ Ashton Old-road and Hyde-road	95	2,000
“ Ashton Old-road and Ashton New-road ...	115	3,790
“ Ashton New-road and Bradford-road	47	1,349
“ Bradford-road and Rochdale Canal	10	151
“ Rochdale Canal and Oldham-road	70	1,800
“ Oldham-road and L. and Y. Railway	21	327
“ Oldham-road, Rochdale-road, Collyhurst- street, and Queen's-road	51	2,653
“ Collyhurst-street, L. and Y. Railway, Church-lane and Rochdale-road	93	2,808
“ Ashley-lane and Rochdale-road	105	2,940
“ Bradford-road and River Medlock	21	414
Total of Streets and Houses	714	21,734

Total population in outlying manufacturing districts amounts to
 $21,734 \times 5\frac{1}{4} = 114,103$ persons.

*Number of Streets and Houses in South and South-Western Suburbs of
Manchester.*

	No. of Streets.	No. of Houses.	
District between Plymouth-grove and Stockport-road	77	2,424	
“ Clarence-street and Plymouth-grove	14	316	
“ Clarence-street and Oxford-road.....	26	613	
“ Oxford-road and Lloyd-street.....	35	969	
“ Lloyd-street and Alexandra-road	49	2,014	
“ Alexandra-road and Chorlton-road	26	1,537	
“ Chorlton-road and Stretford-road	14	965	
“ Stretford-road and River Irwell.....	49	860	
North Side of Manchester.	District between River Irwell and Waterloo-		
	road	15	450
	“ Waterloo-road and Cheetham		
	Hill-road	13	447
	“ Cheetham Hill-road and		
	River Irk	8	114
Total		326	10,709

Estimate of population in 10,709 houses is as follows :—

$$10,709 \times 5\frac{1}{4} = 56,222 \text{ persons.}$$

Amongst the works removed from the more central parts of the city to the outskirts, within a recent period, may be mentioned :—Messrs. Gallo-
way's boiler works, removed from Knott-mill to Bennett-street, Hyde-road,
and employing about 450 men : Messrs. Whitworth's, removing from
Chorlton-street to Ashton Old-road, Openshaw, the works will cover 22
acres ; Thomas Pearse's works, from Hulme Hall-lane, Hulme, to Thomas-
street, West Gorton, and employing 100 men ; Thomas Adams' works,
from Granby-row to West Gorton, and employing 50 men.

The tendency has been for many years past to concentrate in the centre of the city the buildings for the transaction of business, and to remove to the outskirts the vast mills and workshops wherein are produced the articles, the subjects of those transactions. Regarded from this point of view, there are few cities or large towns in the empire within which such extensive changes have been made, or in which such a constant drifting of population to the periphery is taking place, and this must be borne especially in mind in any large scheme of future sanitary operation. The classes engaged in industrial occupations will continually find their sphere of work receding from the centre. It seems to me especially necessary to bear in mind that as a great commercial city Manchester stands almost alone amongst the cities and great towns of England. It is the great commercial centre of a large number of manufacturing towns lying within a radius of 20 miles, the produce of which—the results of skilled labour applied to the raw material, chiefly cotton, in the form of yarn and cloth—finds its way hither for sale or barter; and it is yearly becoming less of a manufacturing town in proportion to its population, and more of a commercial town, that is, a place for the sale of material produced elsewhere; and as this commerce enlarges, the warehouses will continue to extend into the old streets, with displacement of the old houses. This movement has already extended, as I have shown, over nearly 616 acres, and it has made itself felt in a considerable degree over the middle zone indicated on the map.

If the manufactures in the neighbouring towns and in the suburbs of Manchester should proceed at the rate which has characterised their progress of late years, it cannot be long before the streets of the middle zone will be absorbed and form a part of the commercial city.

The displacement of population which has taken place has been attended with less hardship than would have been the result of large destructive operations in most other towns. Not only have the large mills and workshops been driven into the outer zone of the city and even beyond that, but there has been a general migration of the inhabitants of all classes, and this consideration leads us to divide the industrial poor into three classes. First, the producers of our manufactured articles, the operative class *par excellence*, whose work lies largely in the outer zone, and who are to a large extent the occupiers of the new and improved dwellings which have been erected of late years within that zone on its eastern side. Secondly, those engaged in the operations and transactions connected with the sale of the articles produced by the first class, the warehousemen, porters, packers, and others under various designations. These are for the most part in the receipt of good wages, and from choice, even did no necessity exist, would seek their homes in the outer zone, especially as the daily time of commencing business throws no difficulty in the way.

These two are distinct enough, but the third class is necessarily heterogeneous. It may include itinerant salesmen of small articles, and these find their customers in the suburbs and outer zone to which the wealthier classes have fled ; persons engaged in the trades connected with building, all in receipt of good wages and having no requirement to live in the middle zone. It is in this zone that are to be found the vicious, the intemperate, and, from various causes, the very poor, and who can scarcely be described as the industrial poor ; people who are often paupers. It is not asserted that these are the sole occupants, for there are still many mills and large workshops occupying this zone, supplying labour to respectable and industrious operatives, but these will gradually give way to other exigencies, and be moved farther out.

Enough has perhaps been said to show that the displacement of population has been great in the city, but that on the whole it has been gradual and not oppressive ; that suitable residences have actually been provided in healthier localities concurrently with the destruction of the old ones, and that the sources of labour and of living have gone with the people.

It was further shown in my last Report that outside the business area just described there was a zone lying between this and that portion of the city which has been erected since 1831, and which is coloured green on the maps ; that in this middle zone are to be found the worst portions of the city as it now exists, and of which in successive portions I gave a full description ; that in any scheme of sanitary operations portions of this zone would have the first claims, and would have to be first treated ; and I also showed that if the whole of this narrow zone had to be treated under Mr. Cross's last Act (and a very large portion is in like condition) it would involve a first outlay of seven or eight millions sterling.

A prominent object of Mr. Cross's last Act was the provision of improved dwellings for the working people whose houses had been destroyed in the course of sanitary alterations, and as it was contemplated that the area for such dwellings would be diminished by the widening of streets, provision of open spaces, destruction of courts, &c., whilst it was desired, if not made imperative, that the new dwellings should be on or very near to the original sites, dwellings in several tiers, stories, or flats, it was thought might meet the requirements, and in several towns blocks of these buildings have been erected. From Salford, Liverpool, London, and Glasgow, the four towns in which, so far as I am aware, buildings of this class have been recently erected, I have obtained information from the proper authorities, from which it appears that the average general mortality of the occupants is not below that of the general rate of the towns in which they are situated, and scarcely below that of the special localities ; that the death-rate of children under five years of age, and of elderly persons, is above the average, whilst in the intermediate ages it is below the average ; that death

from infectious and zymotic diseases generally are in considerable excess of the average; whilst we learn that even in Glasgow, where the sanitary alterations have been made on such a scale as to have provided new house accommodation for nearly 300,000 persons, the reduction of the rate of mortality in ten years has not been greater than has taken place in Manchester within the same period.

On the whole, it seems to have been the opinion of the informants that the results derived so far from the blocks of buildings erected, are not such as to justify any very sanguine anticipations of a large diminution of mortality from the occupancy of such dwellings.

Bearing in mind, then, the great cost attending the application of Mr. Cross's last Act to large areas, with the somewhat unsatisfactory results hitherto attained from the class of dwellings with which it was thought most expedient to replace those already existing, and the fact that Manchester for many years past has practically been undergoing the change contemplated in all respects but one by the Act; that the change has extended over a very large area, and is still radiating outwards; that the inhabitants of the respective districts altered whose dwellings have been converted to other purposes, have really been provided with healthier dwellings in the new localities, where their work has been provided also, I am disposed to recommend to the Committee a course of action of a more moderate character, under which open spaces shall be provided; certain "back to back" houses laid together, and converted into "through" houses; others more favourably situated and in good condition left as they are; courts opened at the ends for better ventilation; some ranges of houses entirely pulled down, and their sites left unoccupied in some instances, and in others sold for the erection of new dwellings; and with such other alterations and ameliorations as may be shown in the detailed description of the areas successively brought before them.

JOHN LEIGH.

At a meeting of the Committee held on the 7th March, 1878, it was—

Resolved,—

That this Committee having visited all the properties mentioned in the memorial of the Manchester and Salford Sanitary Association, dated April 5th, 1876, along with various other properties, and having given the subject their full consideration, are unanimously of opinion that it is not necessary to put in operation the provisions of the "Artizans' and Labourers' Dwellings Act, 1875," within this city.

On behalf of the Committee,

(Signed) THOS. SCHOFIELD, *Chairman.*

Town Hall, Manchester,

24th June, 1878.